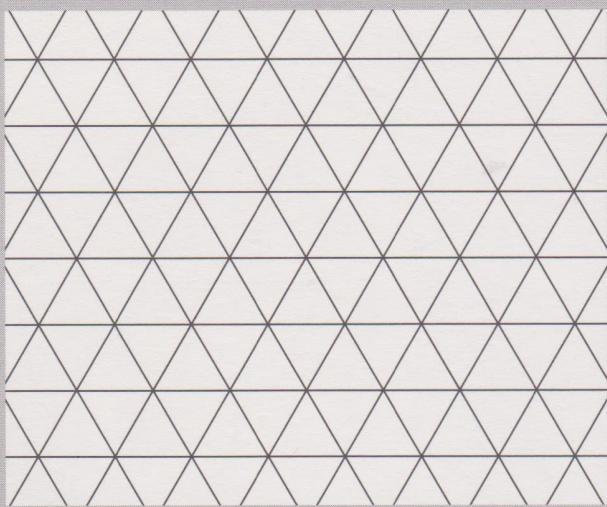
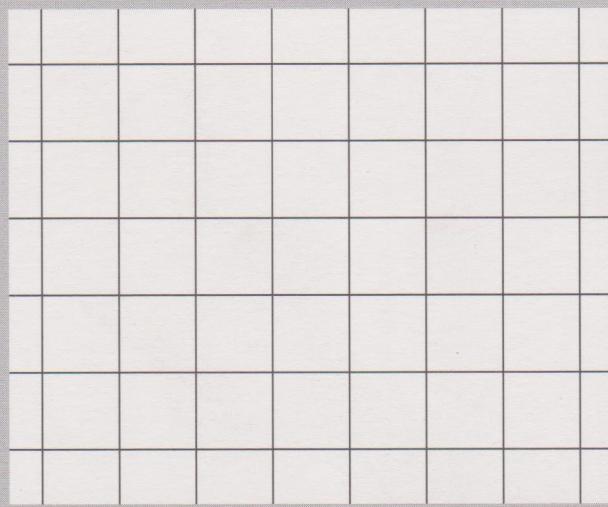


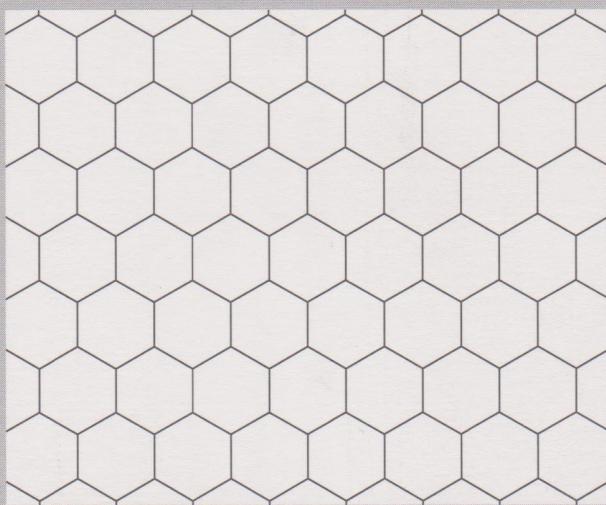
M336 TILING CARD 1 SIDE 1



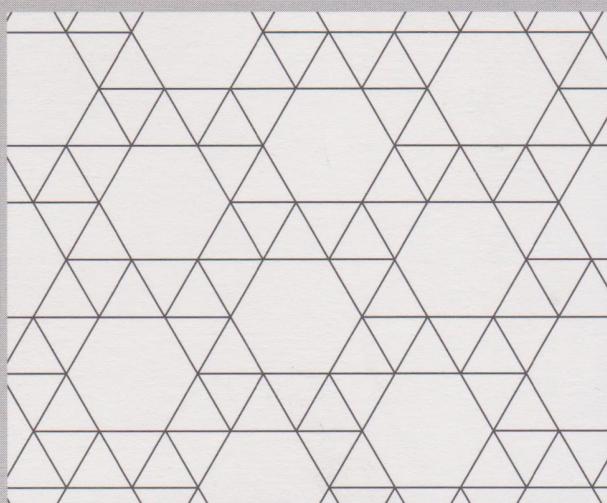
(3,3,3,3,3,3)



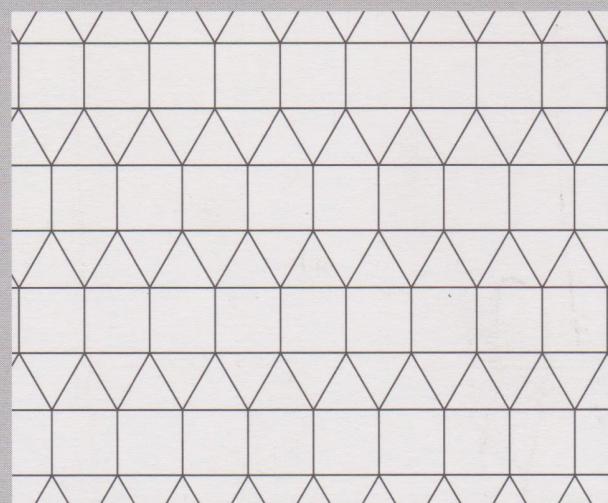
(4,4,4,4)



(6,6,6)

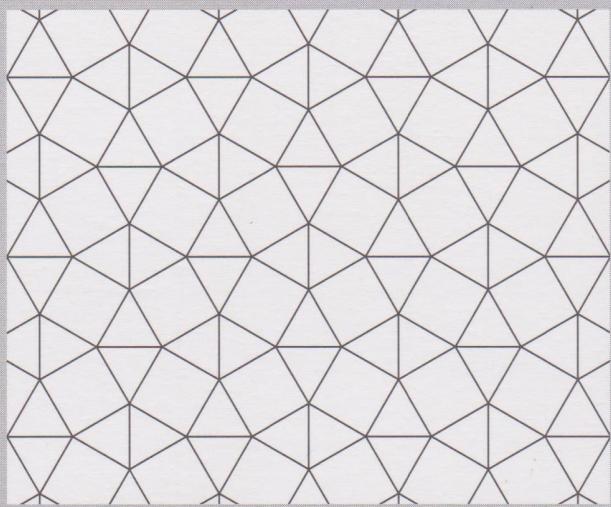


(3,3,3,3,3)

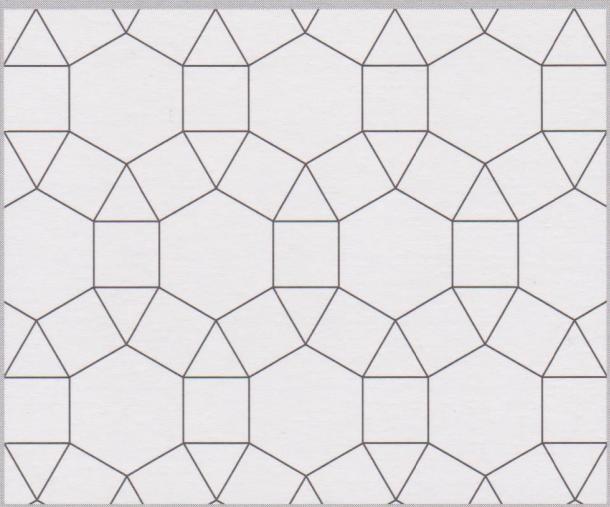


(3,3,3,4,4)

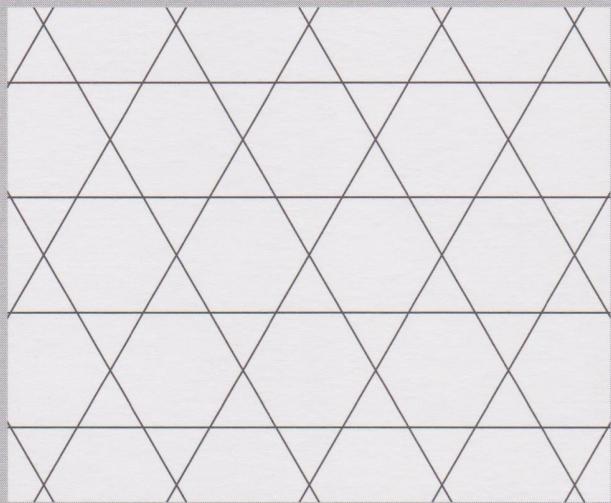
M336 TILING CARD 1 SIDE 2



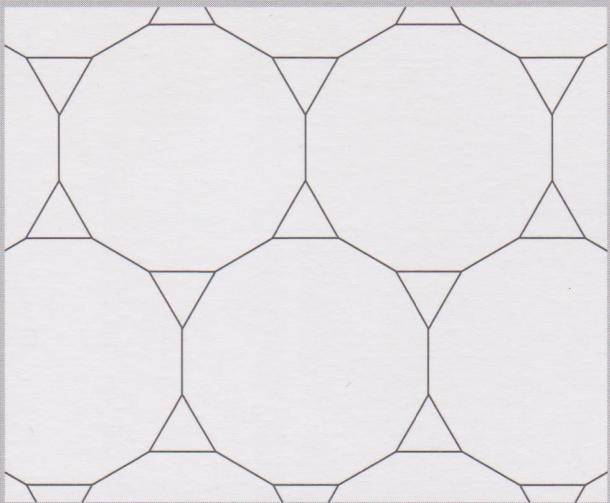
(3,3,4,3,4)



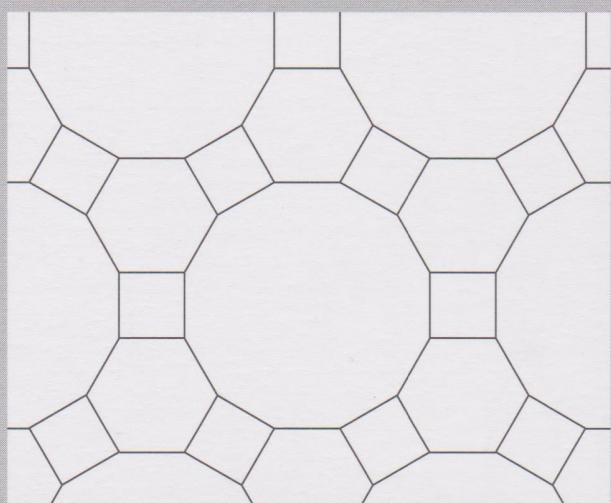
(3,4,6,4)



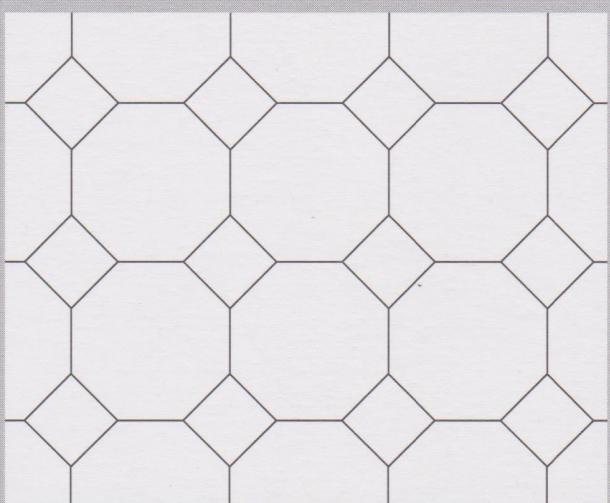
(3,6,3,6)



(3,12,12)

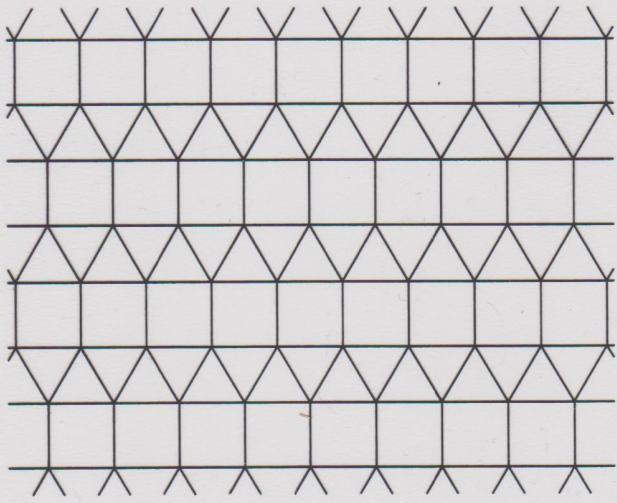
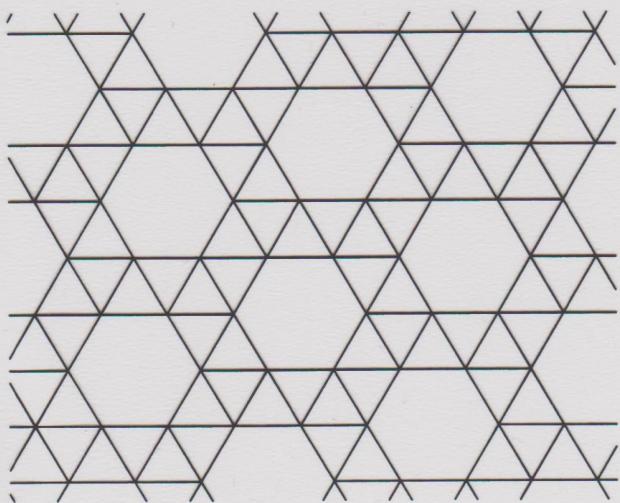
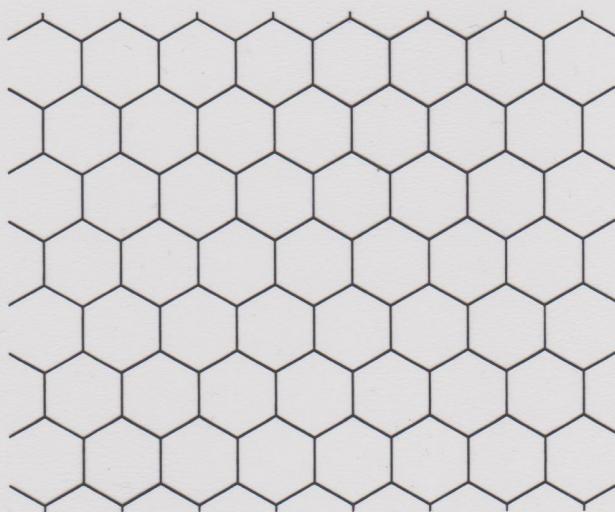
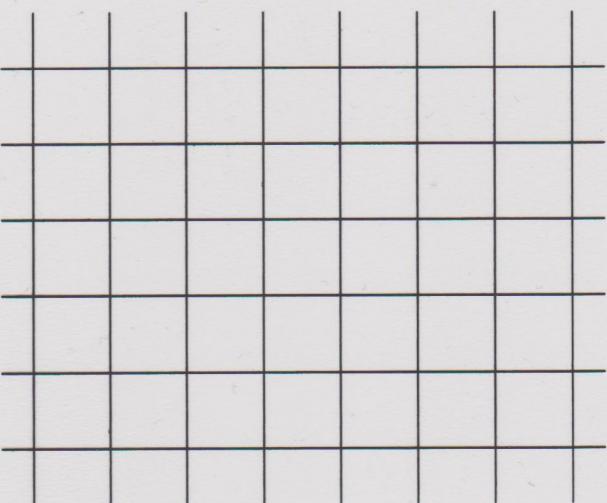
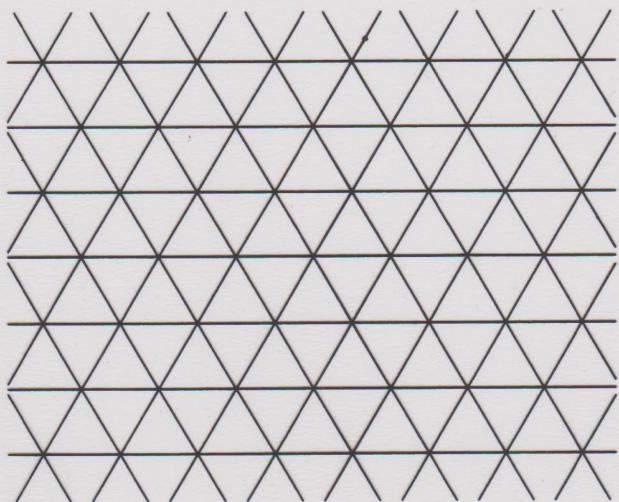


(4,6,12)

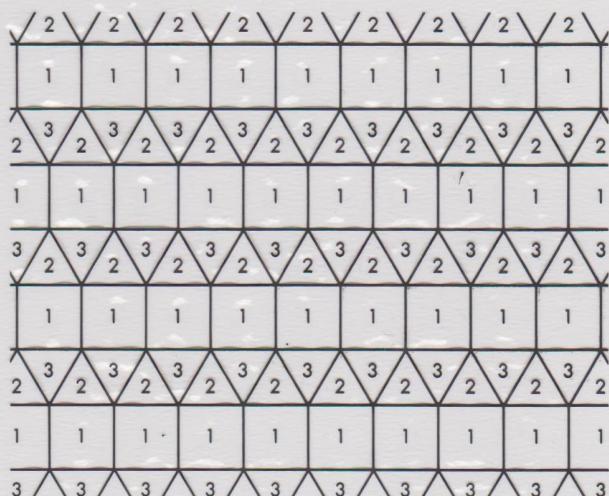
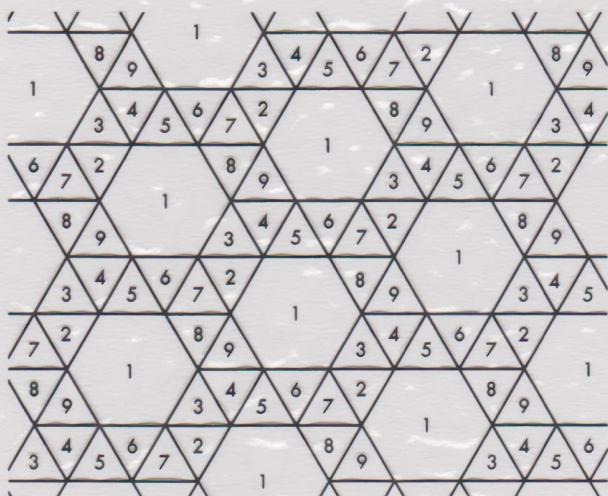
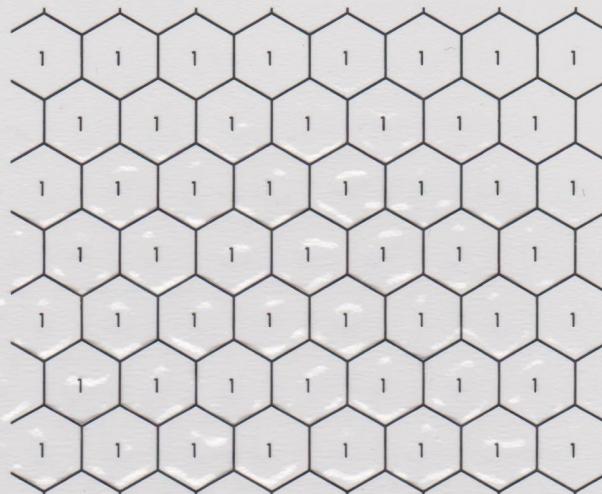
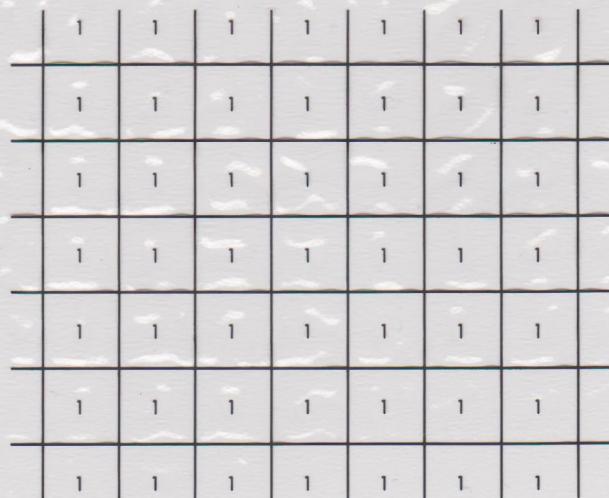
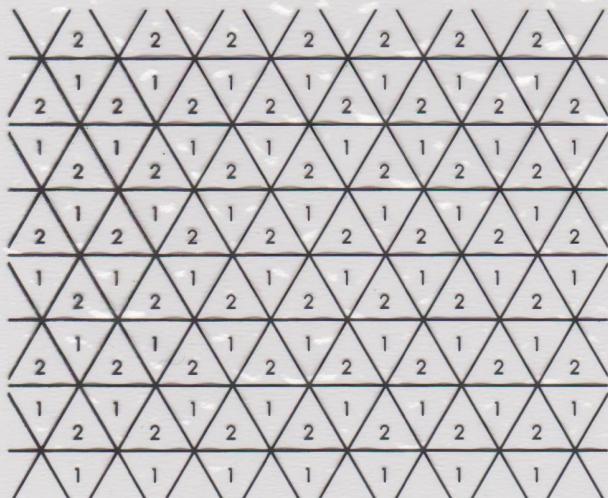


(4,8,8)

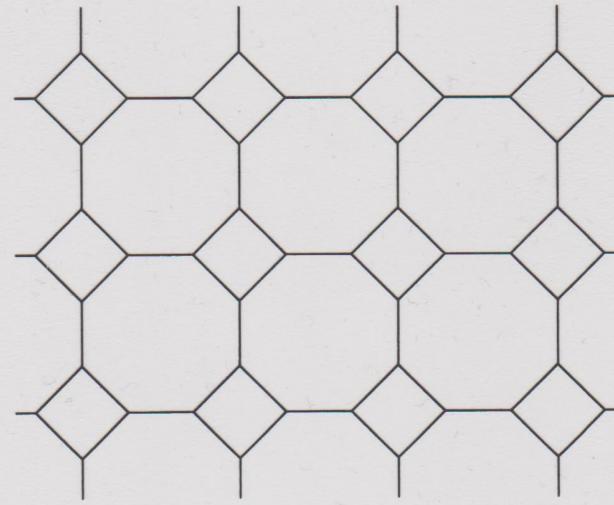
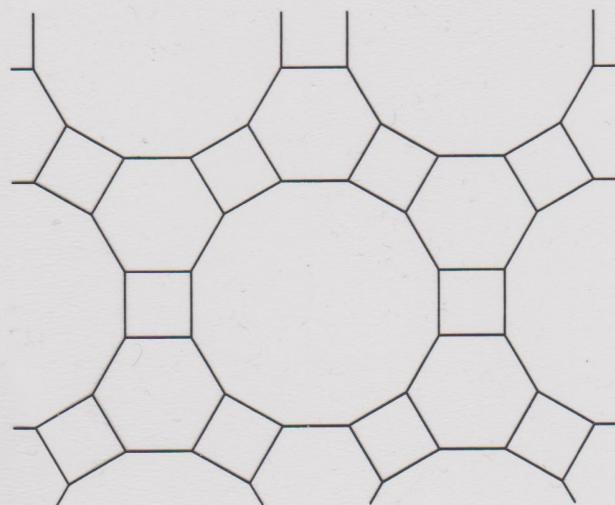
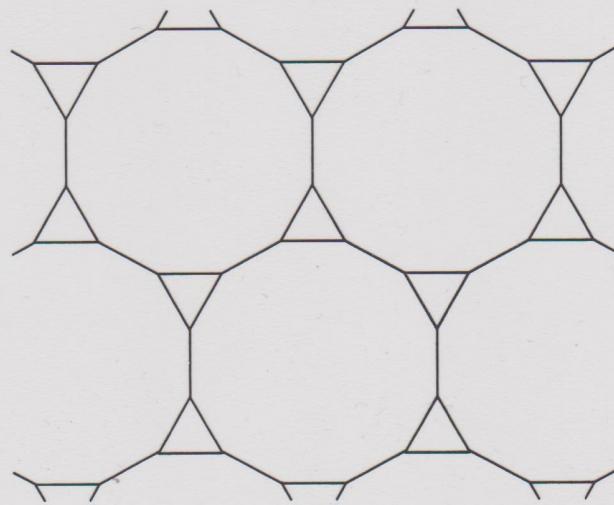
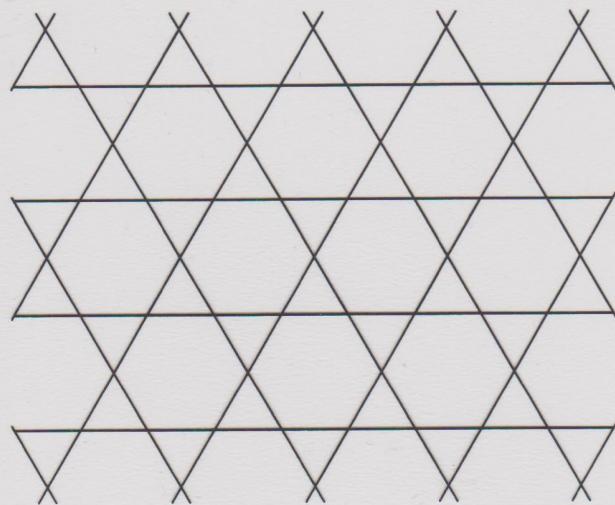
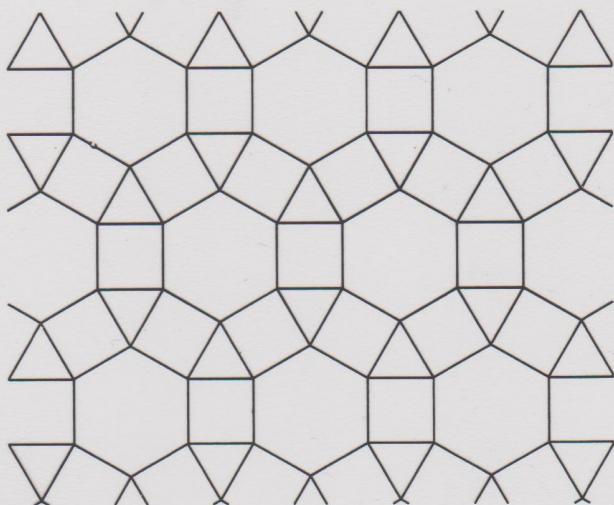
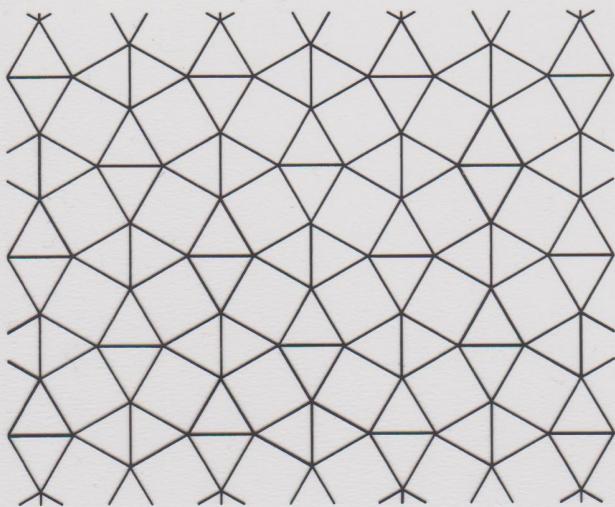
M336 TILING CARD 1 SIDE 1 OVERLAY 1



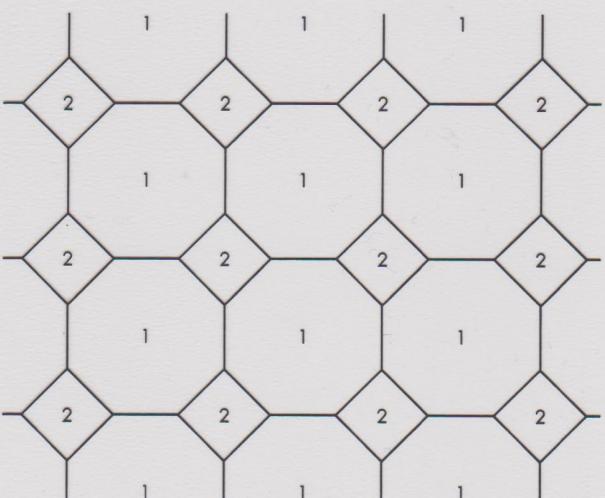
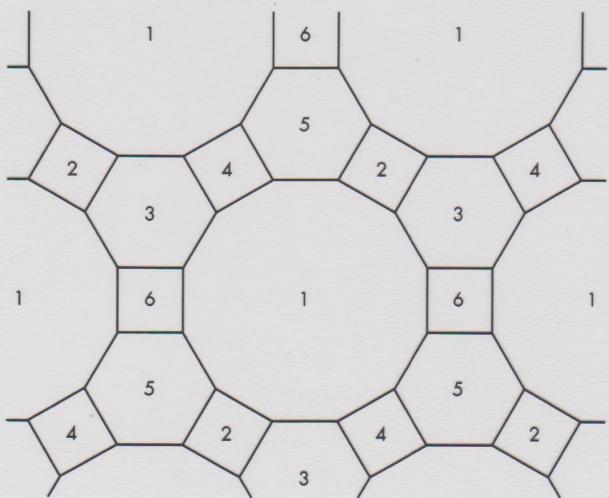
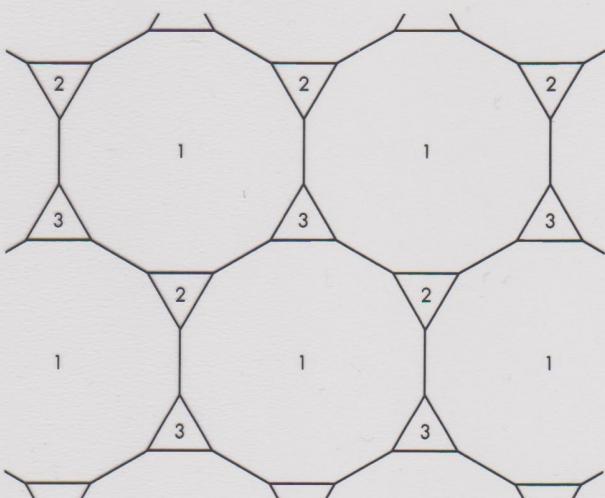
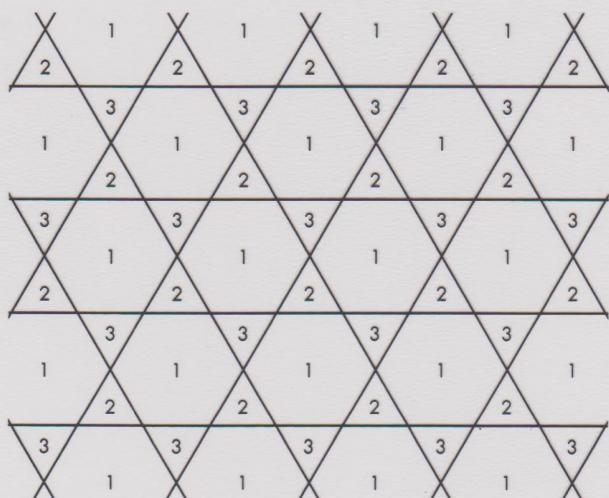
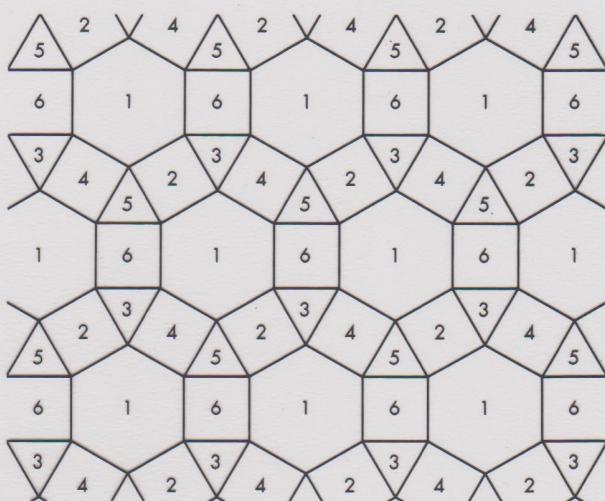
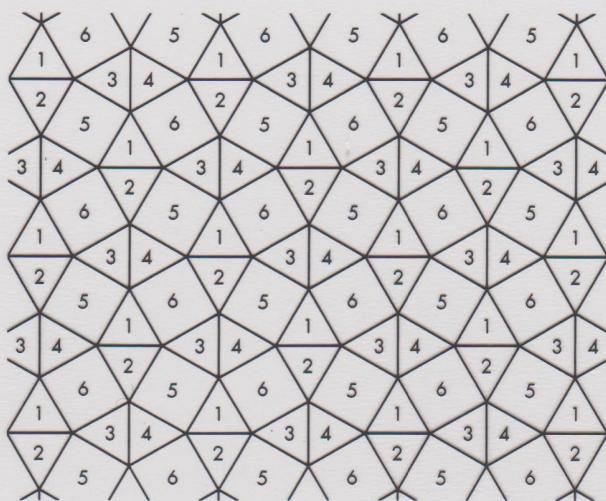
M336 TILING CARD 1 SIDE 1 OVERLAY 2



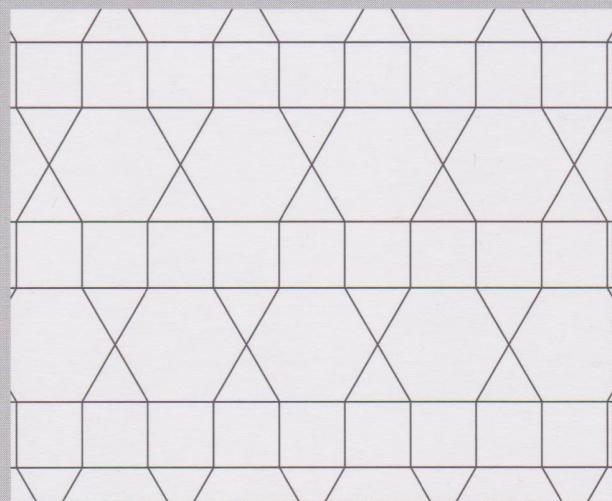
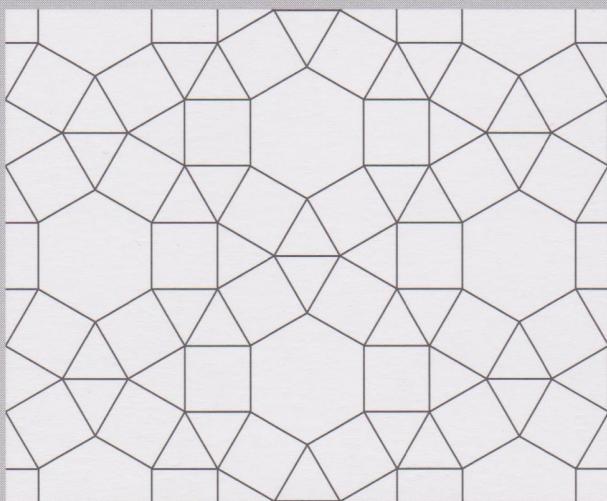
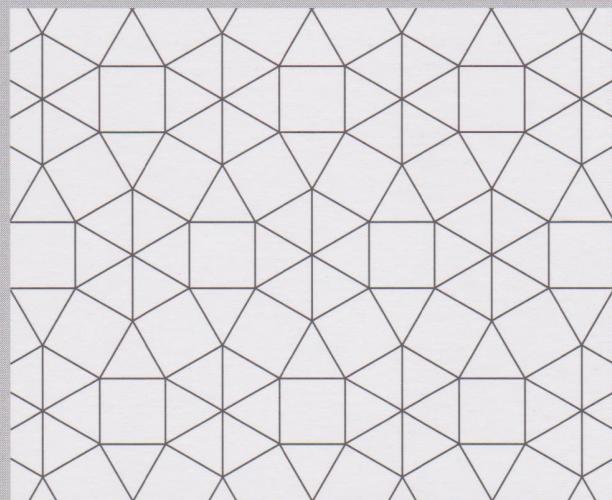
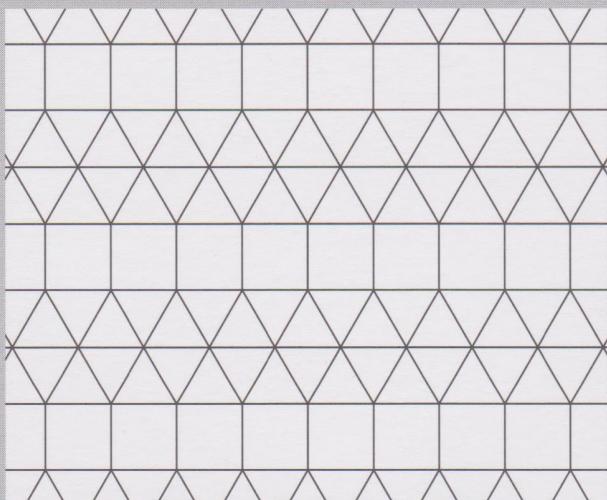
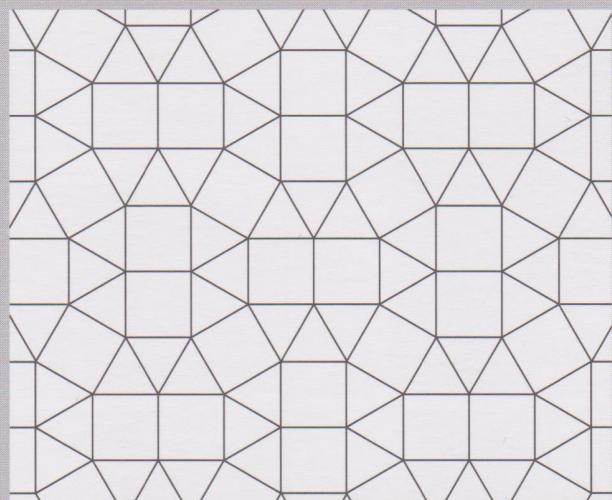
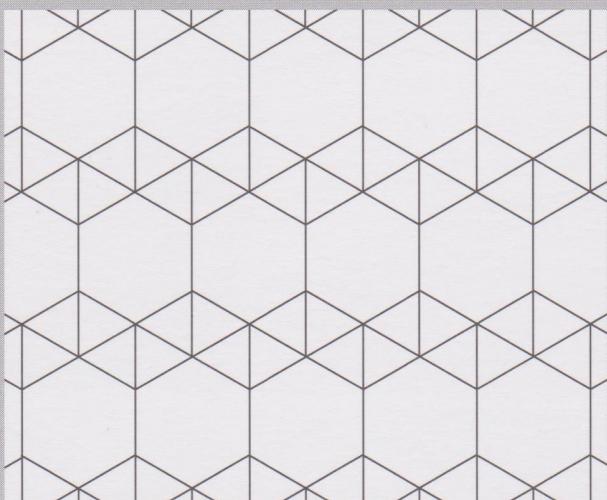
M336 TILING CARD 1 SIDE 2 OVERLAY 1



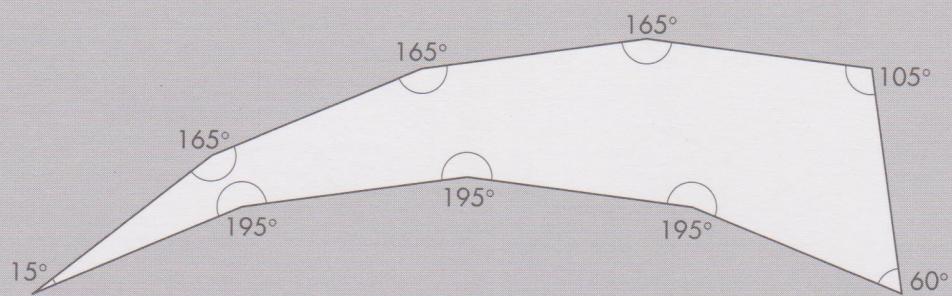
M336 TILING CARD 1 SIDE 2 OVERLAY 2



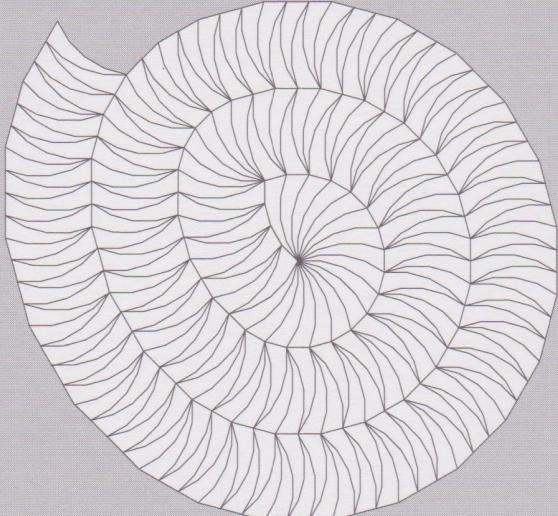
M336 TILING CARD 2 SIDE 1



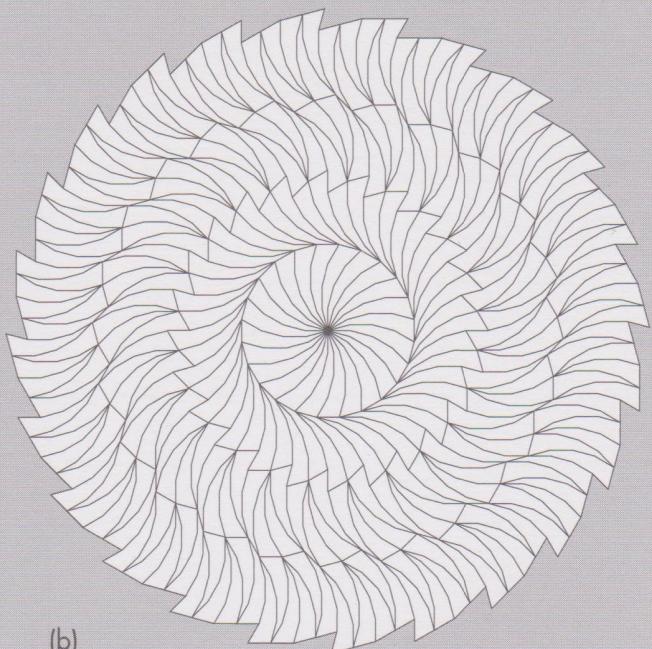
M336 TILING CARD 2 SIDE 2



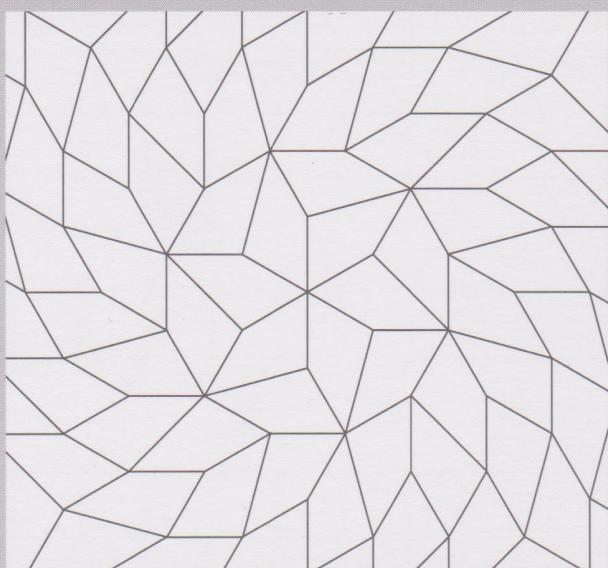
Template for (a) and (b)



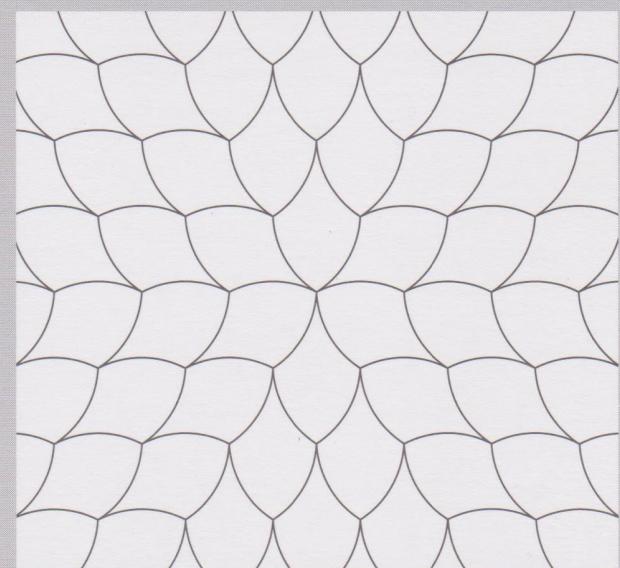
(a)



(b)

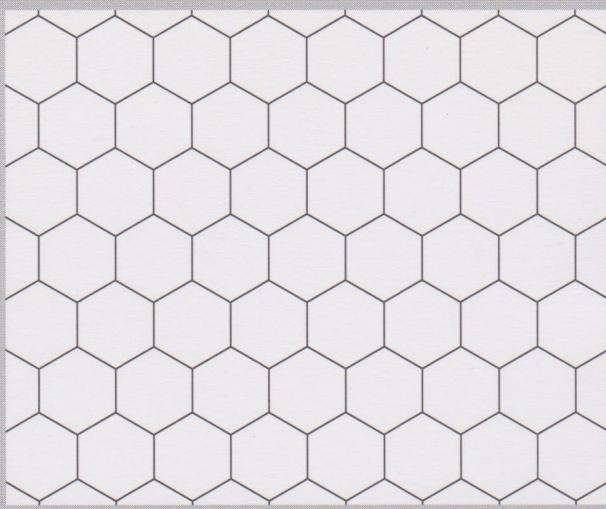


(c)

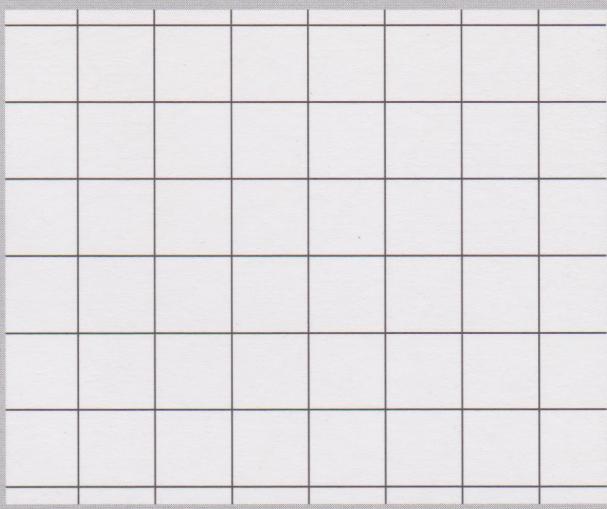


(d)

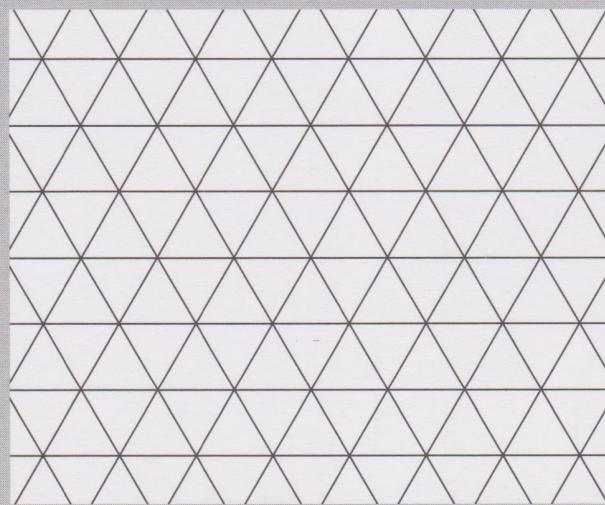
M336 TILING CARD 3 SIDE 1



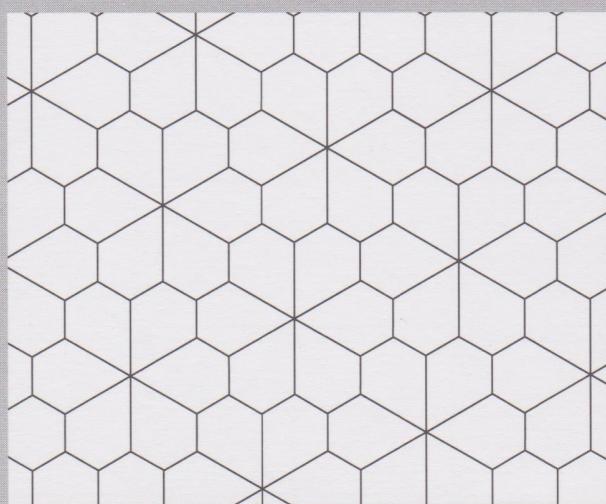
[3,3,3,3,3,3]



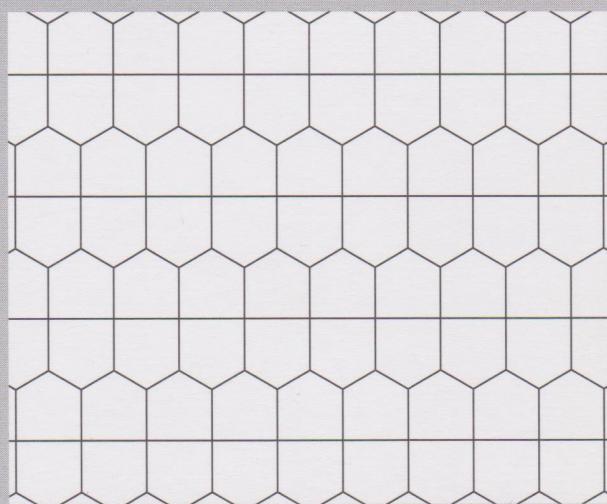
[4,4,4,4]



[6,6,6]

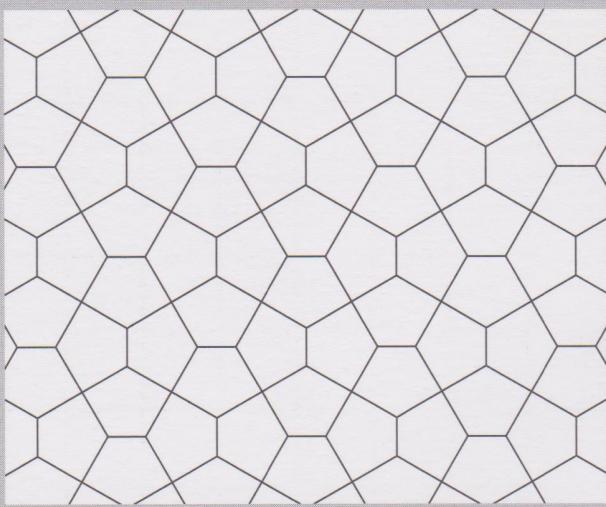


[3,3,3,3,6]

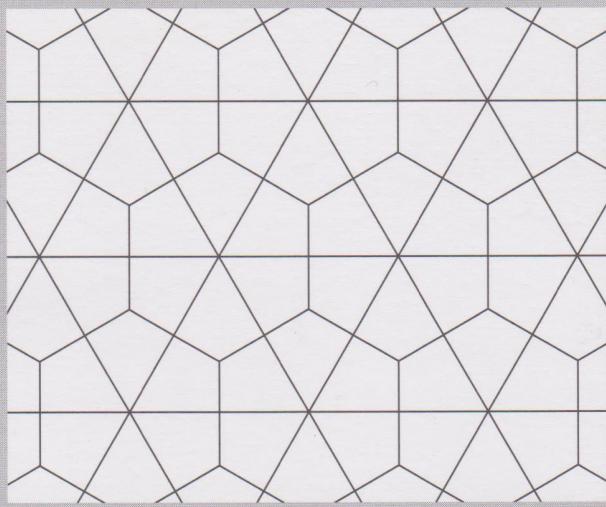


[3,3,3,4,4]

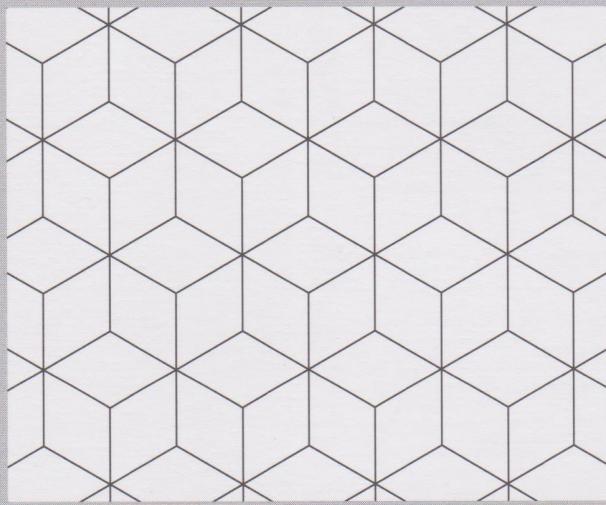
M336 TILING CARD 3 SIDE 2



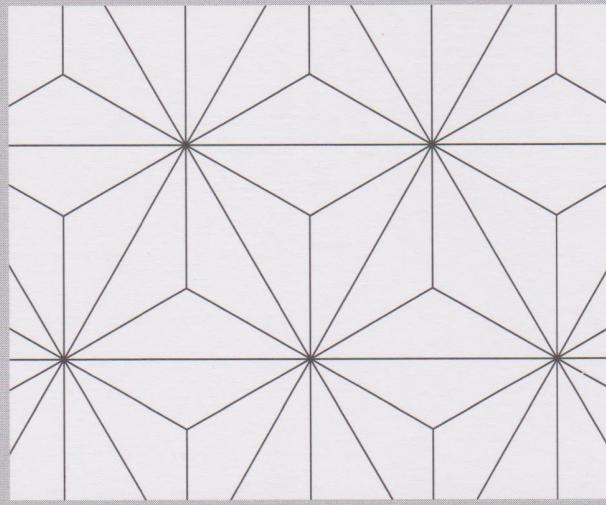
[3,3,4,3,4]



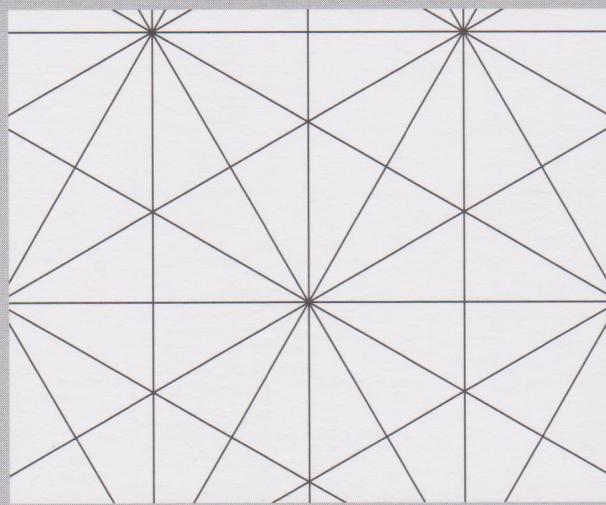
[3,4,6,4]



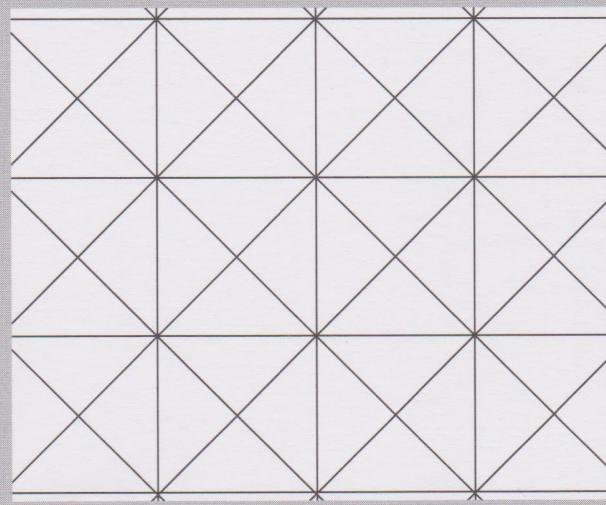
[3,6,3,6]



[3,12,12]

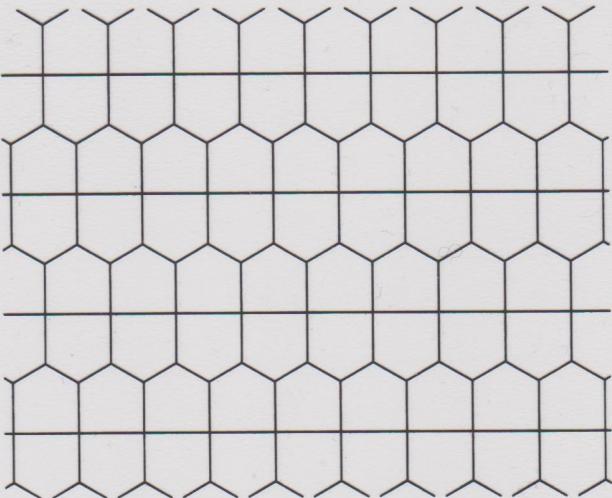
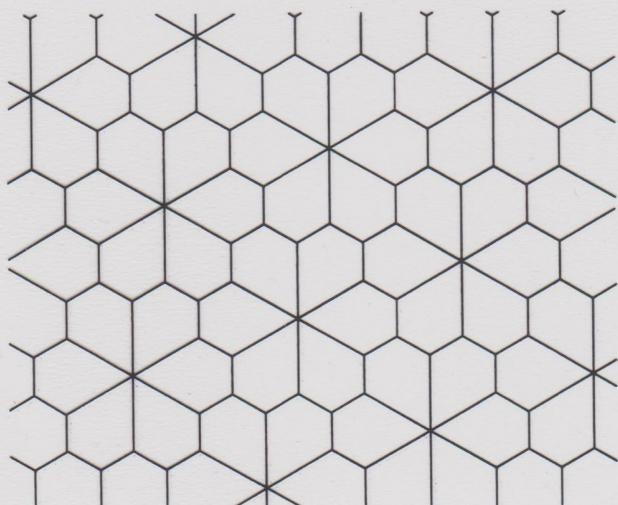
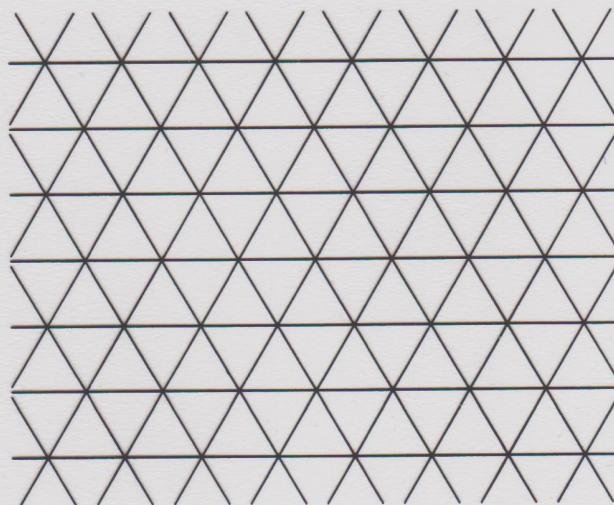
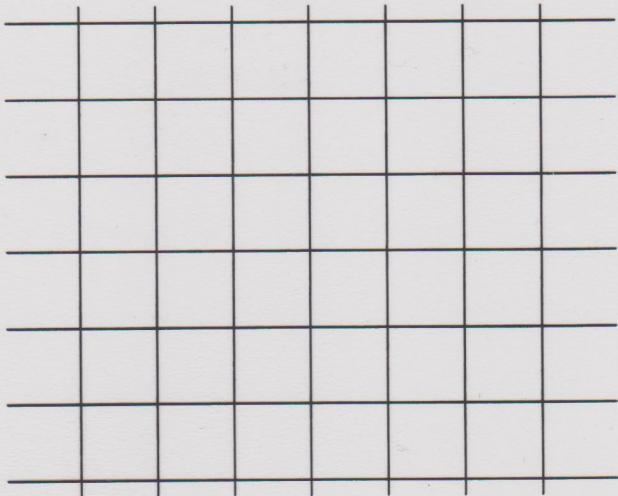
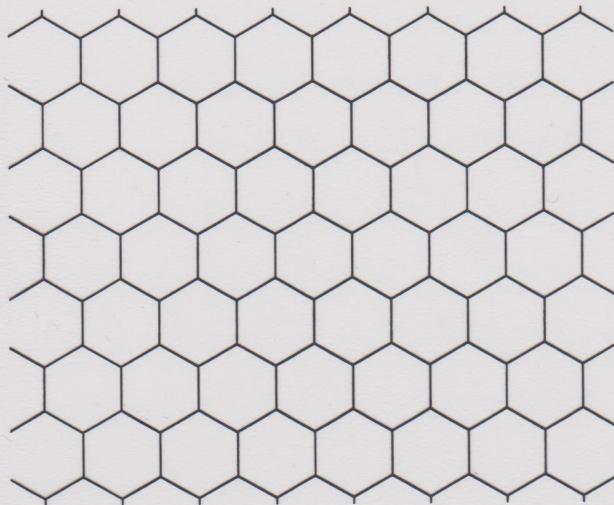


[4,6,12]

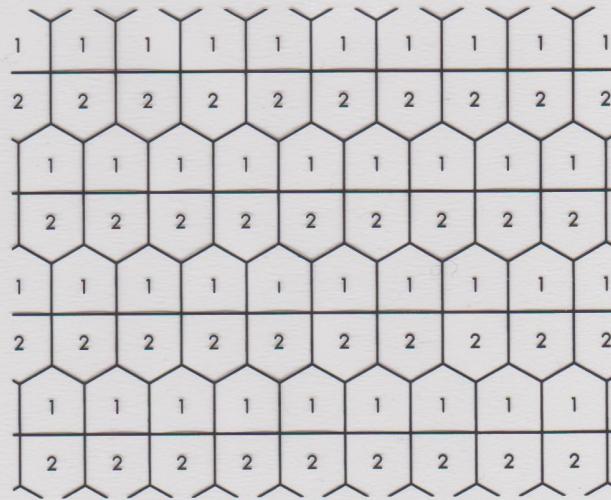
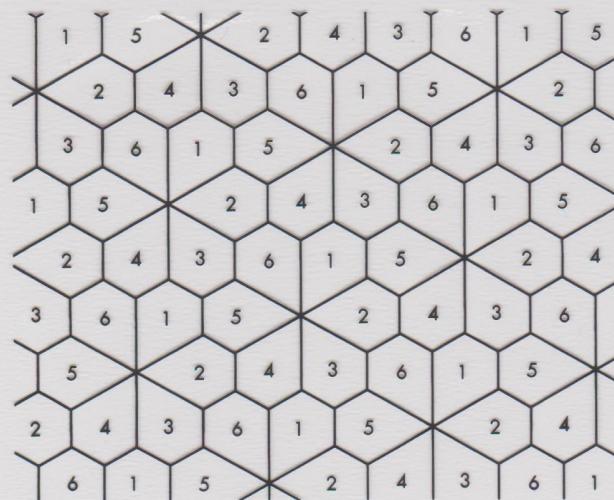
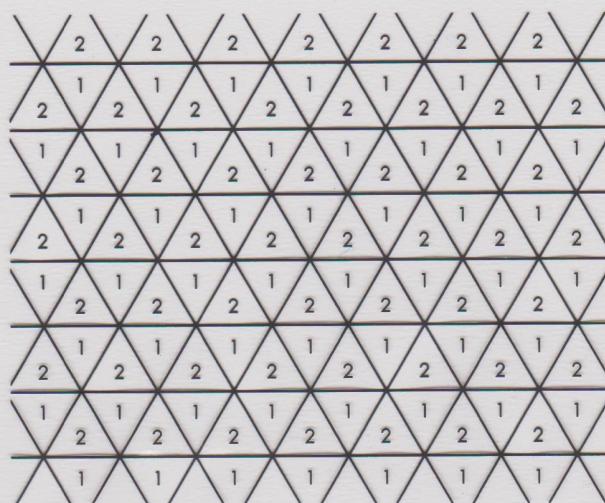
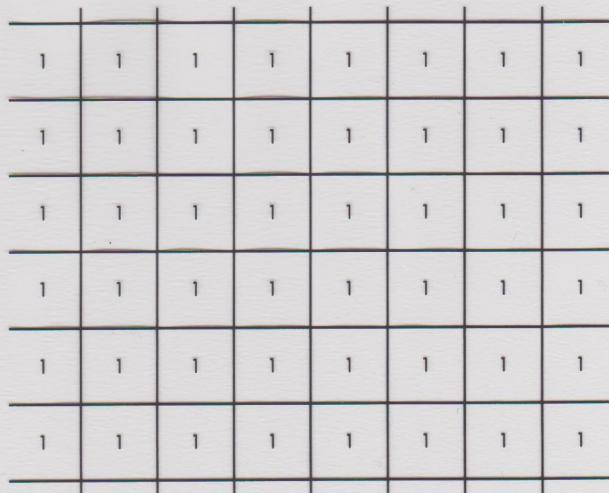
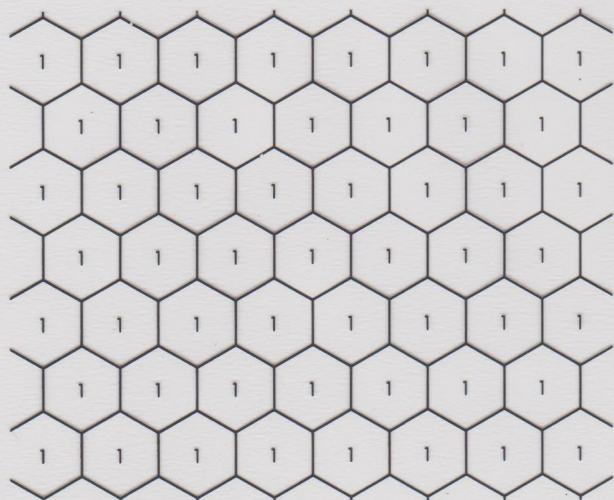


[4,8,8]

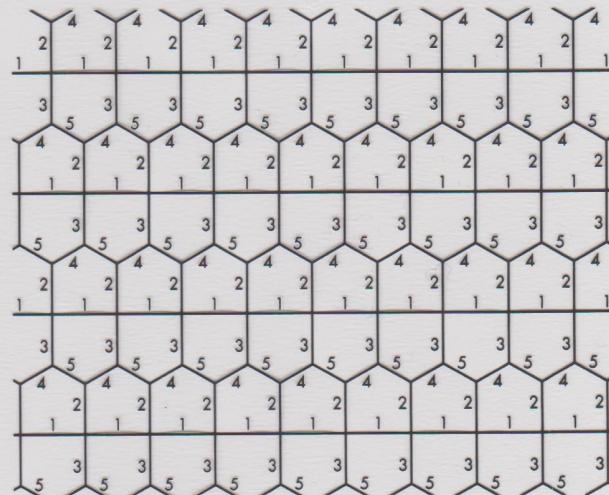
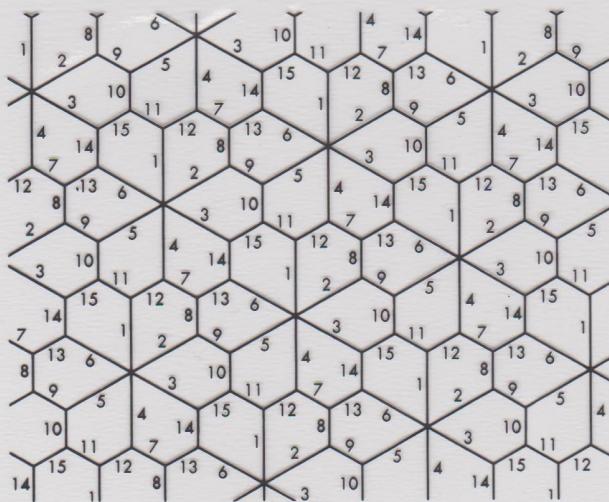
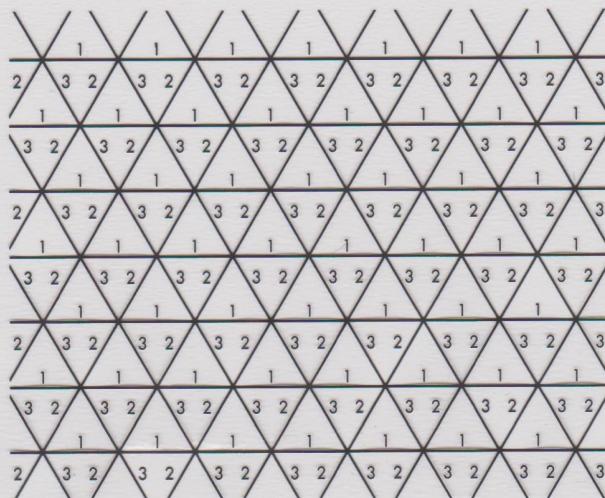
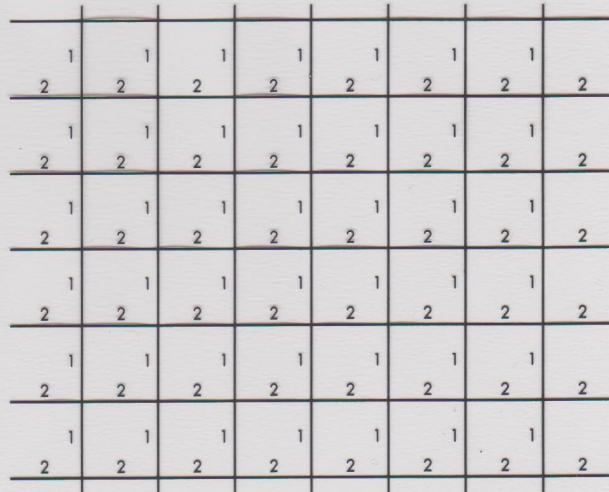
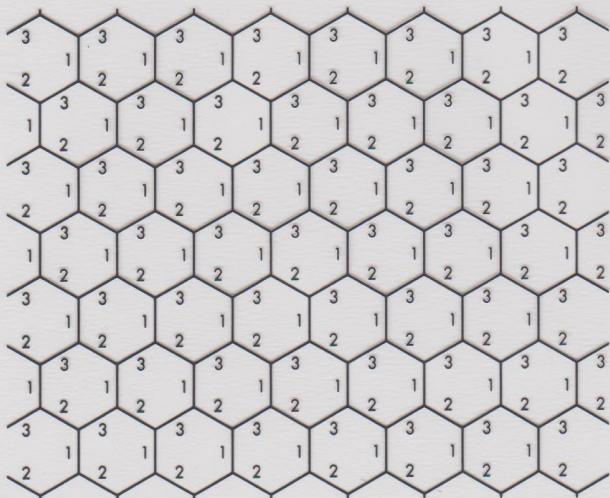
M336 TILING CARD 3 SIDE 1 OVERLAY 1



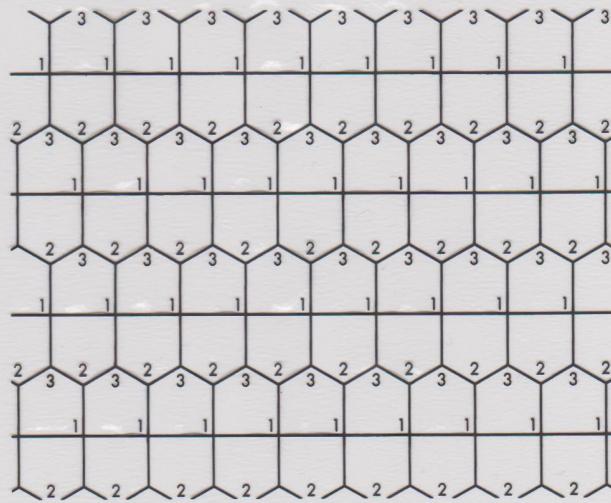
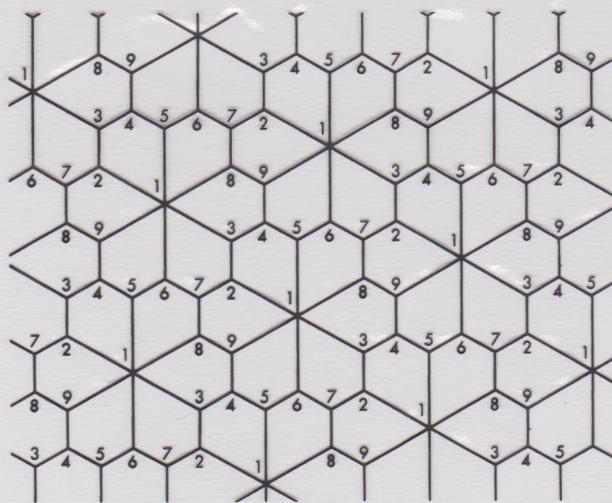
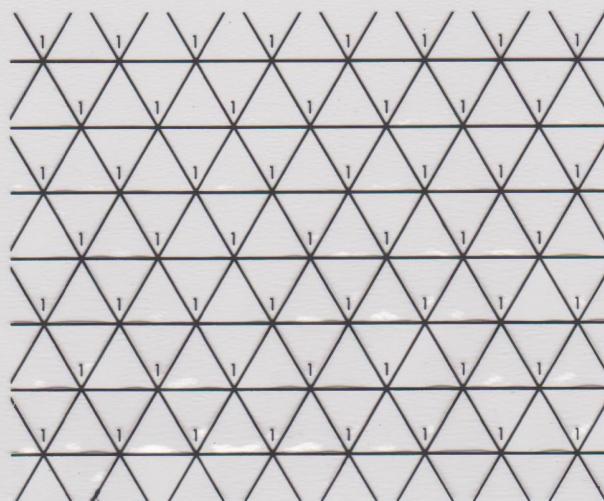
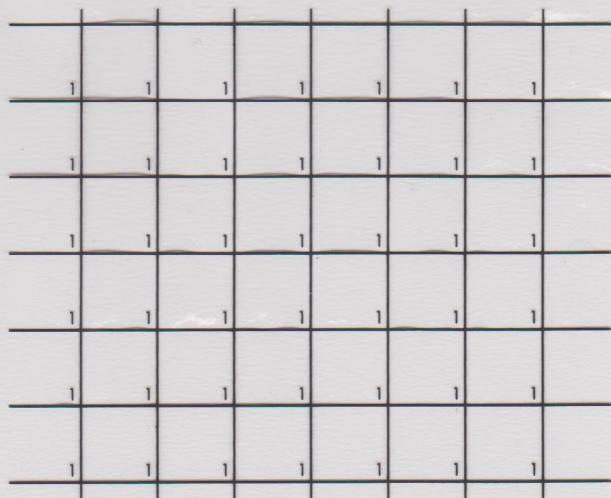
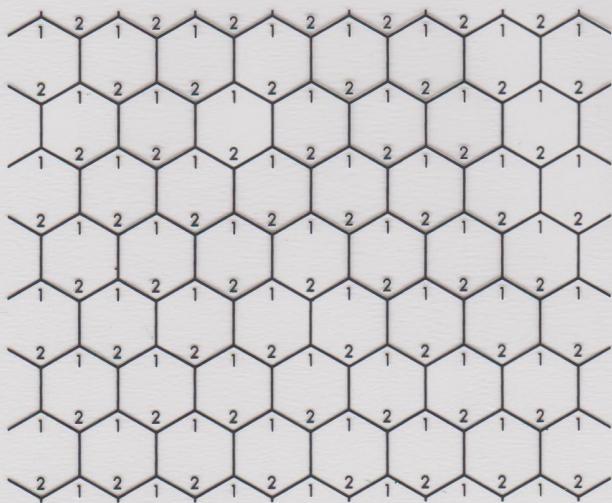
M336 TILING CARD 3 SIDE 1 OVERLAY 2



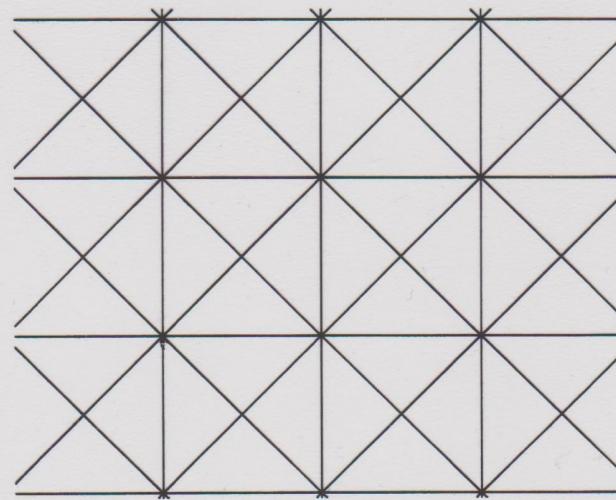
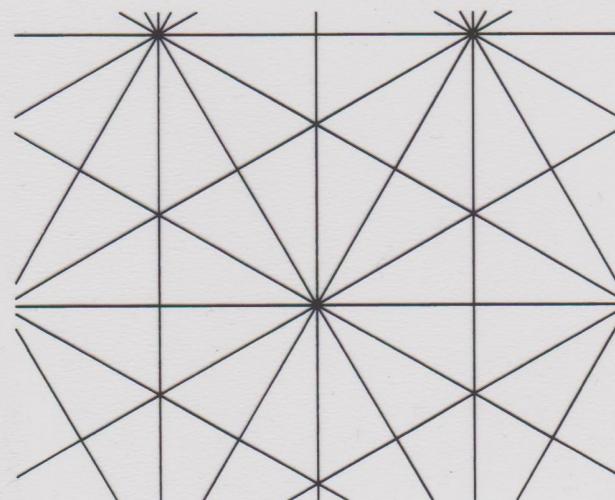
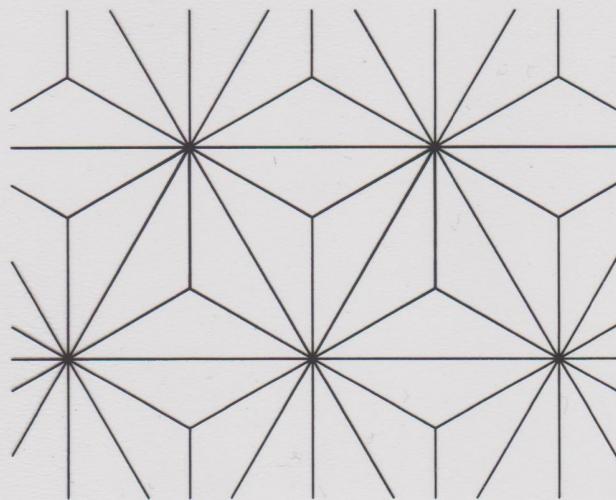
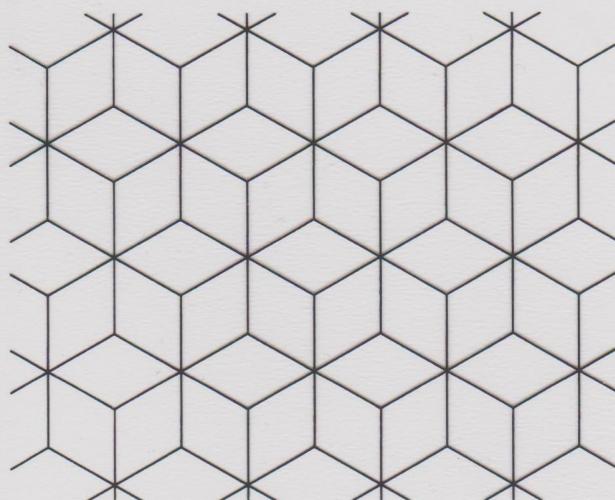
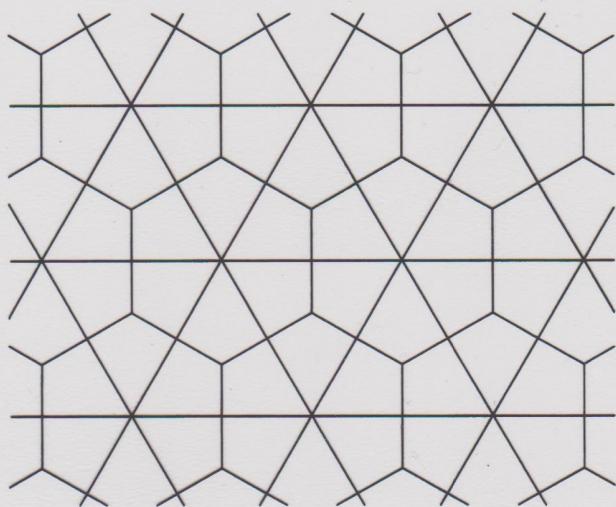
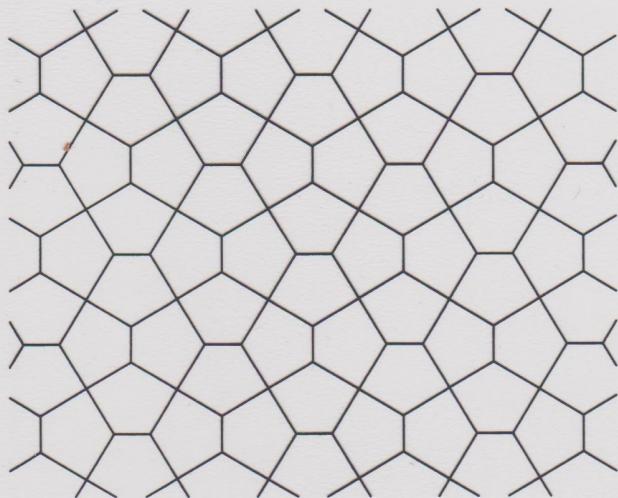
M336 TILING CARD 3 SIDE 1 OVERLAY 3



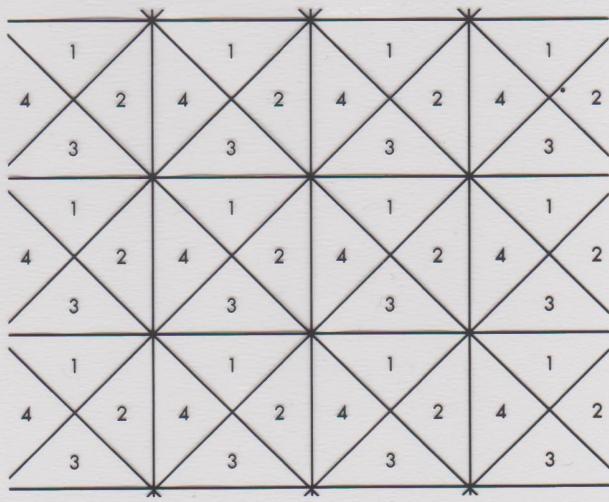
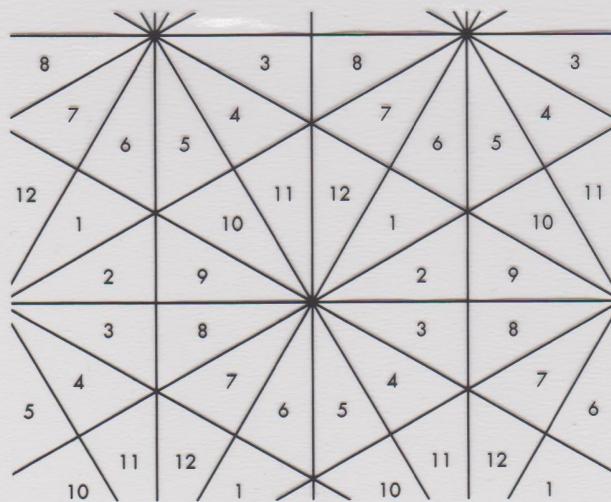
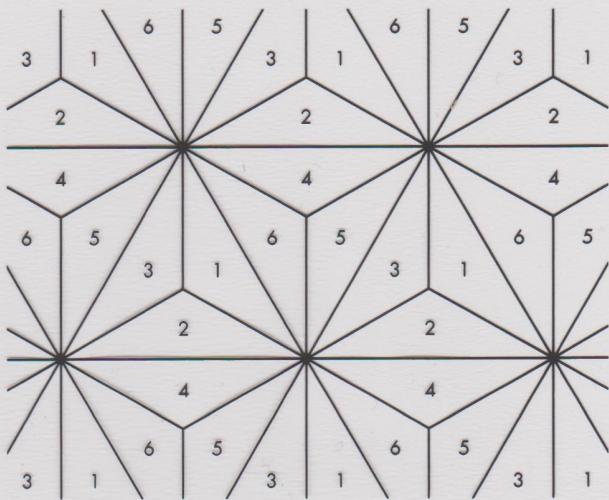
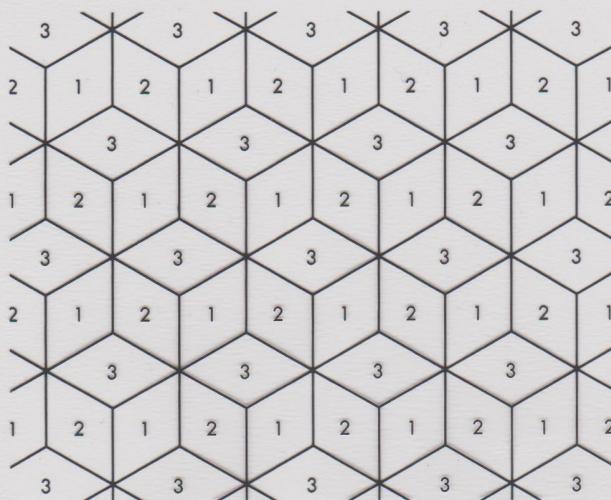
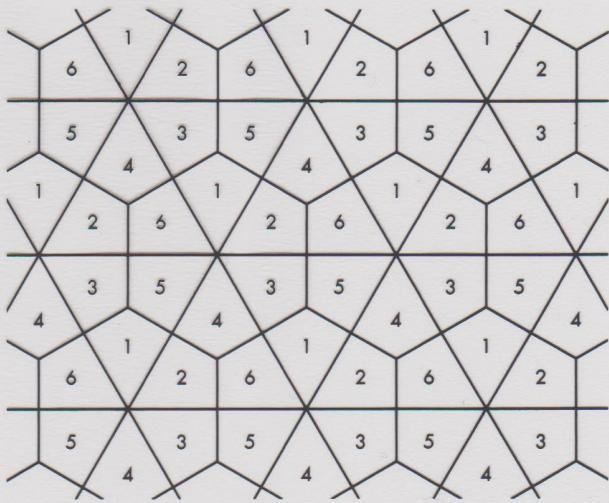
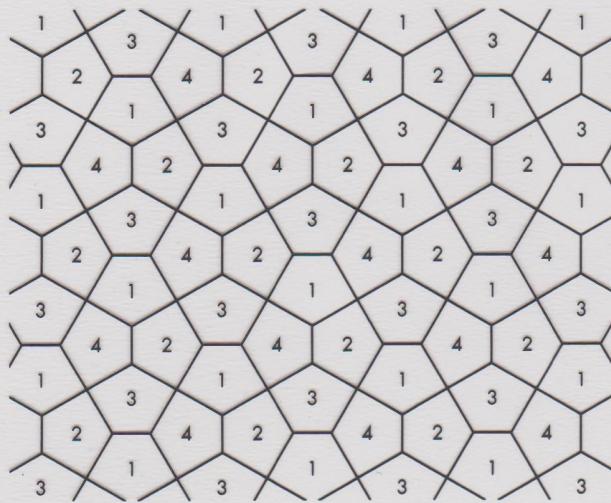
M336 TILING CARD 3 SIDE 1 OVERLAY 4



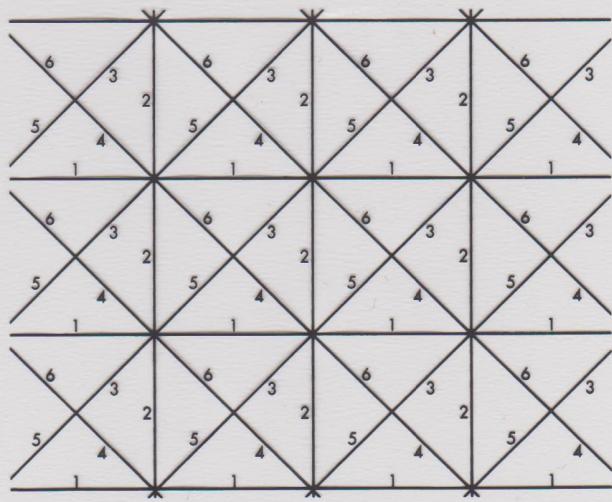
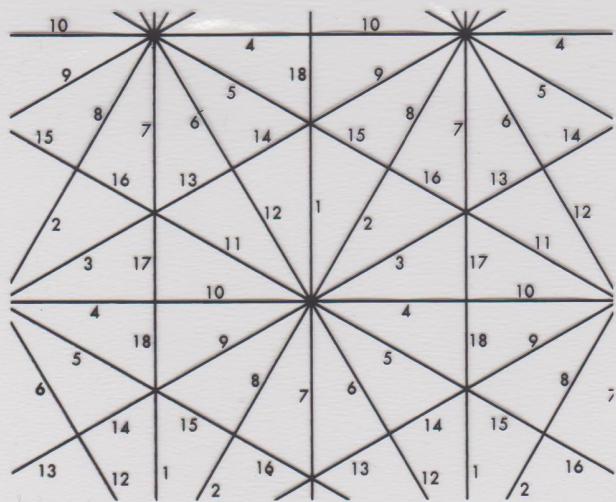
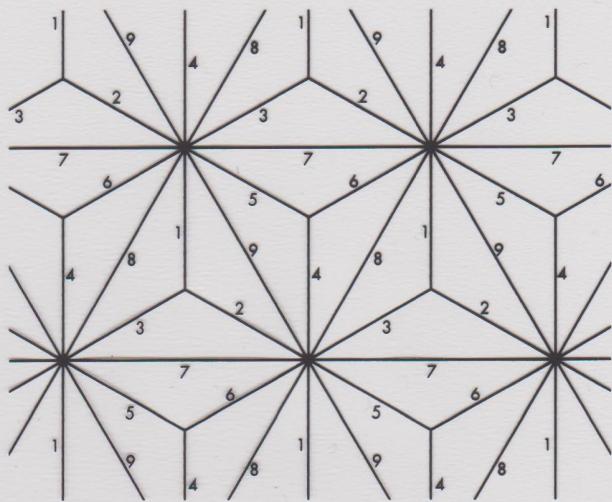
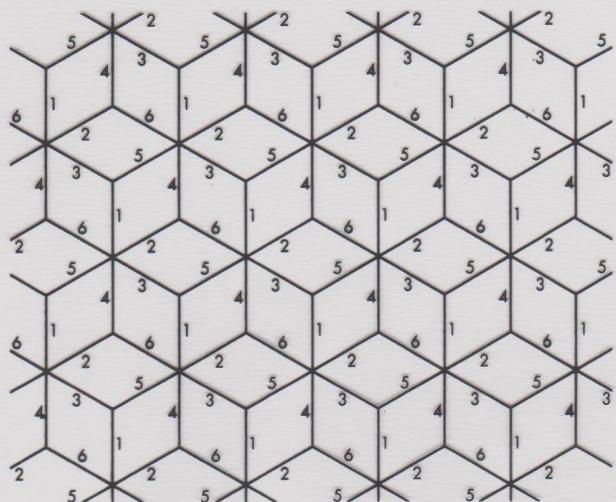
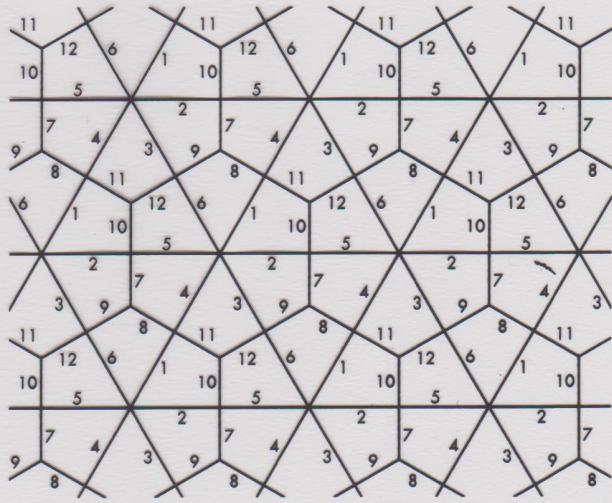
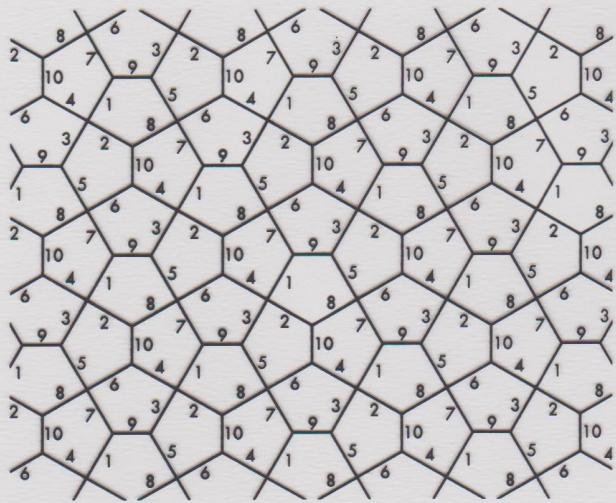
M336 TILING CARD 3 SIDE 2 OVERLAY 1



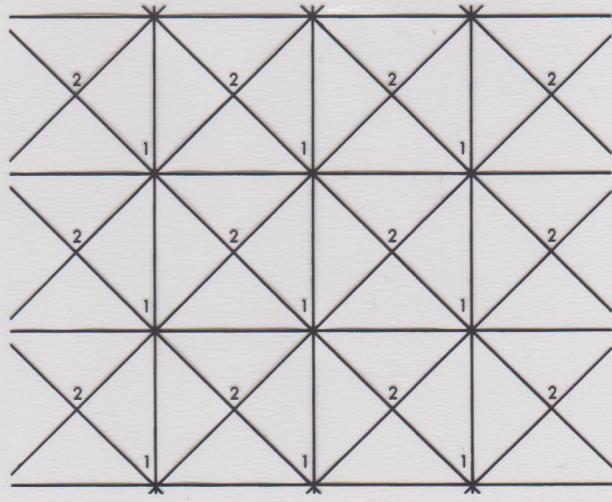
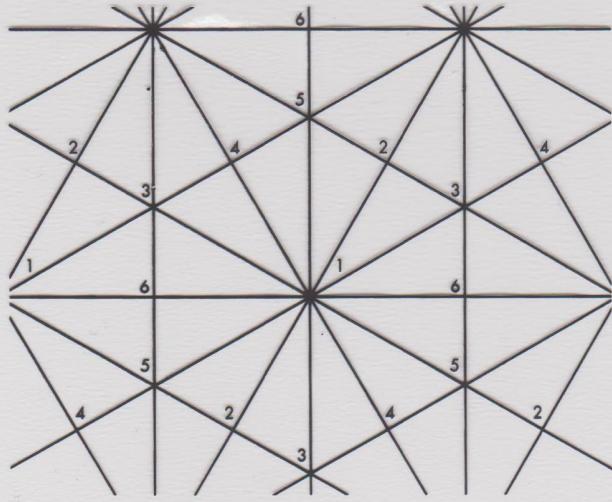
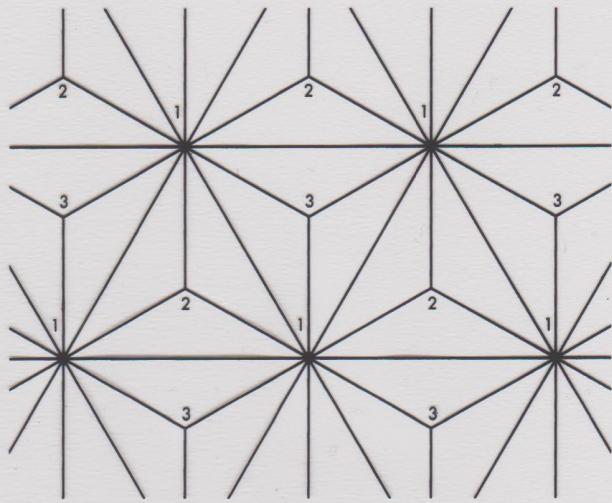
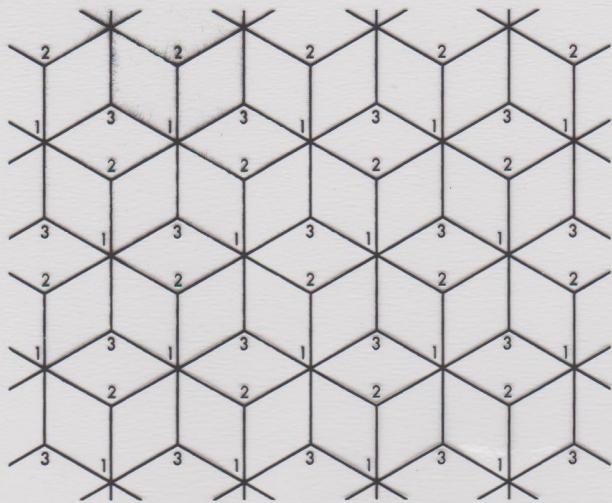
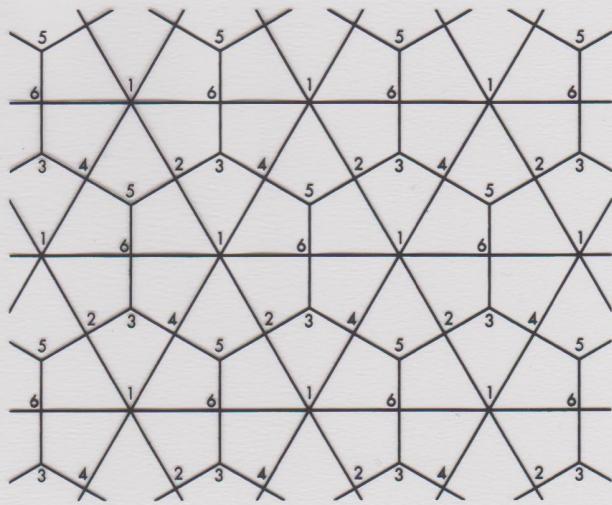
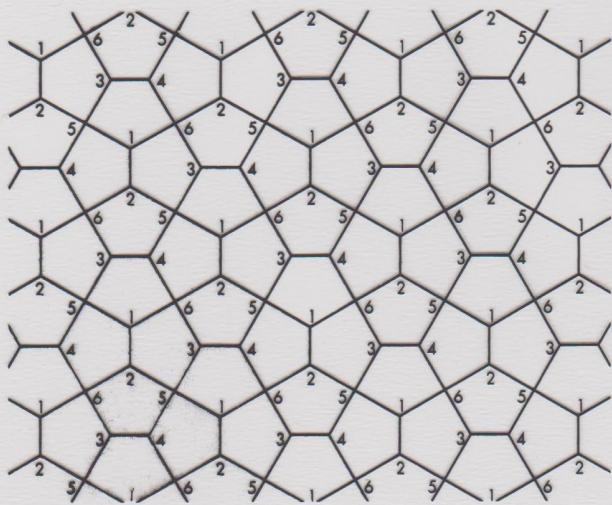
M336 TILING CARD 3 SIDE 2 OVERLAY 2



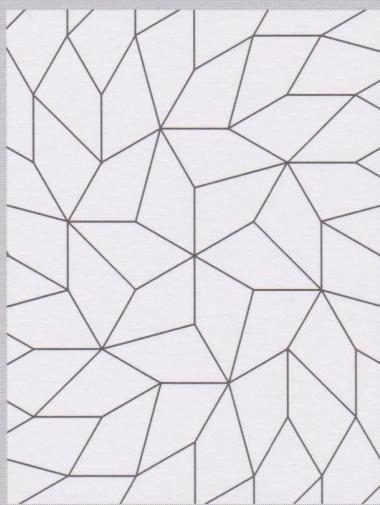
M336 TILING CARD 3 SIDE 2 OVERLAY 3



M336 TILING CARD 3 SIDE 2 OVERLAY 4



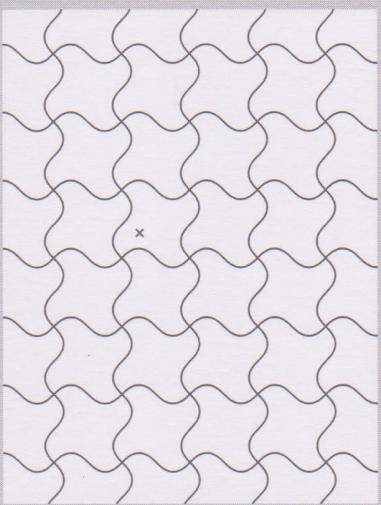
M336 TILING CARD 4 SIDE 1



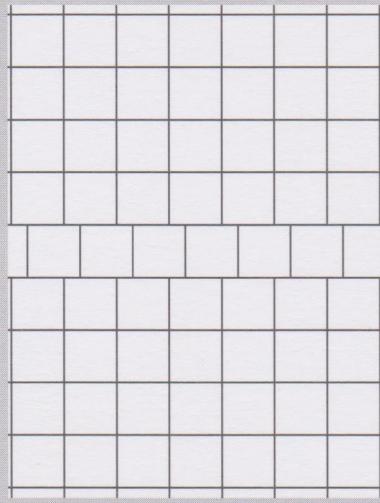
(a)



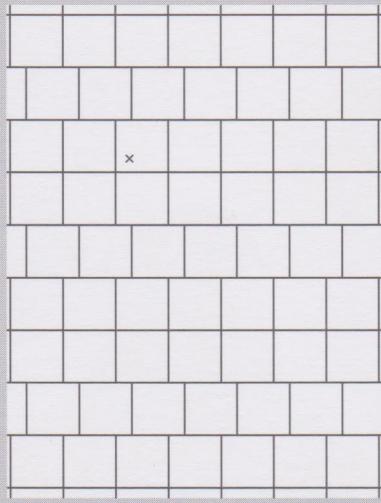
(b)



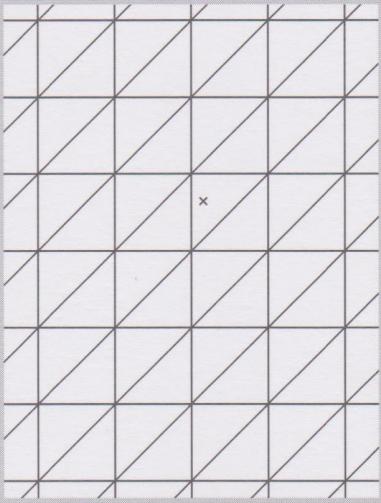
(c)



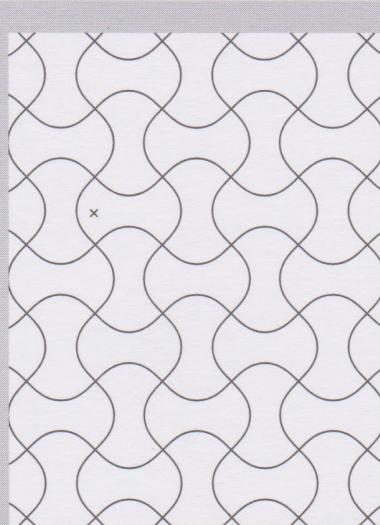
(d)



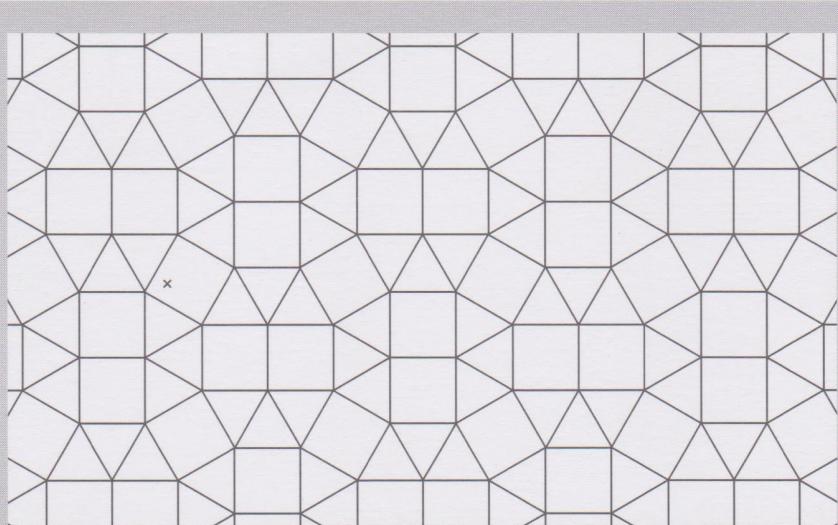
(e)



(f)

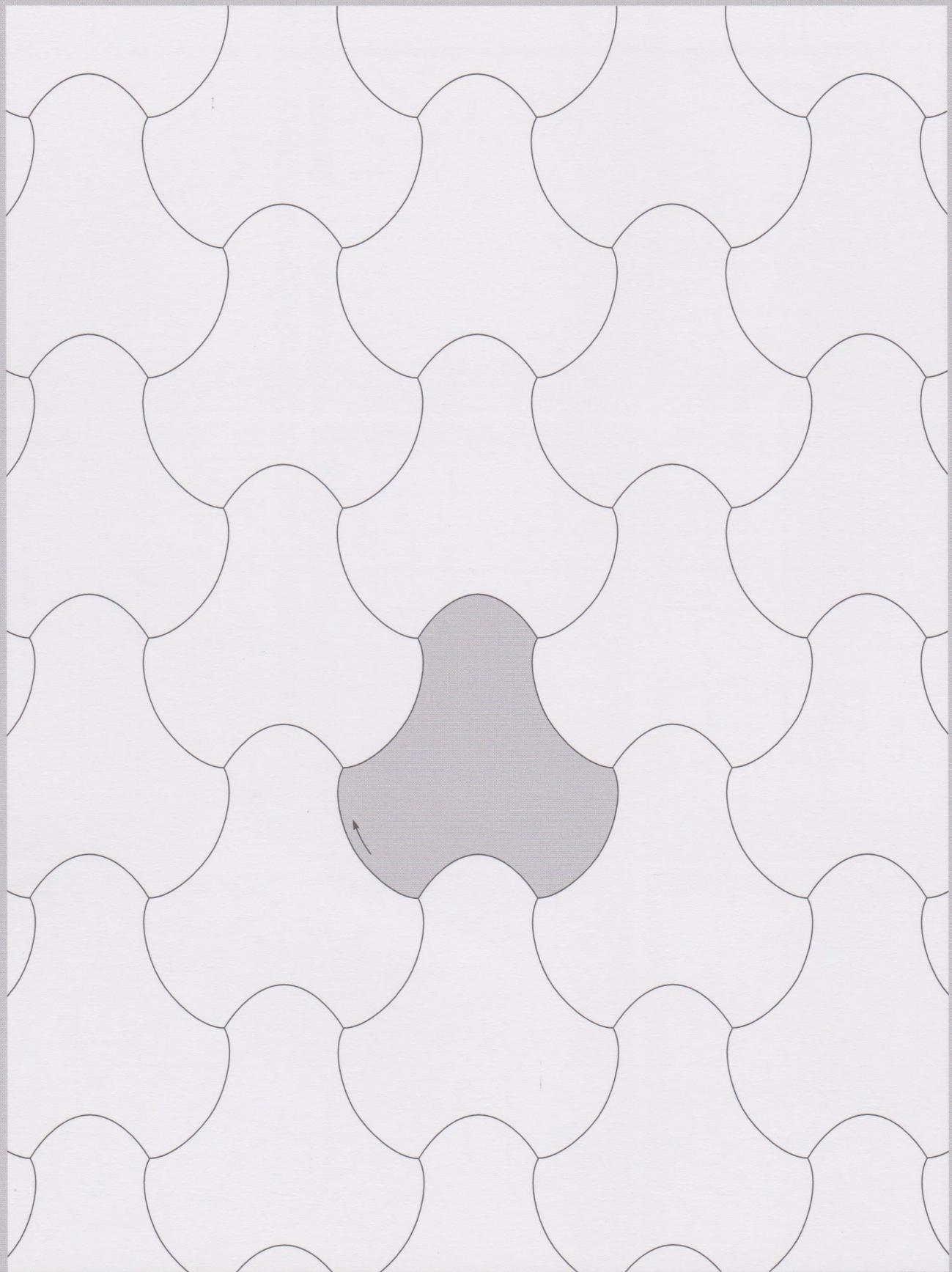


(g)

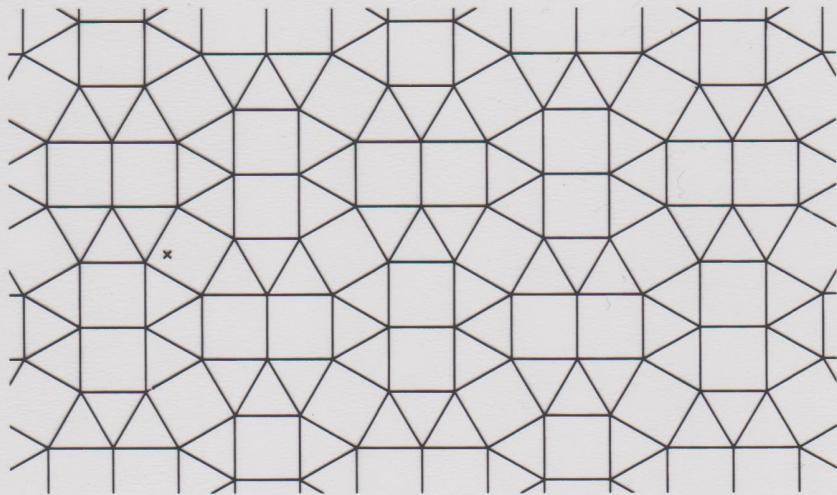
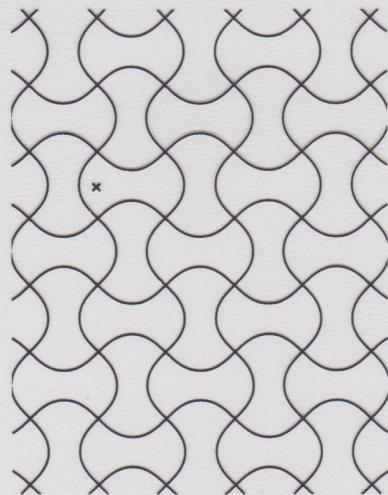
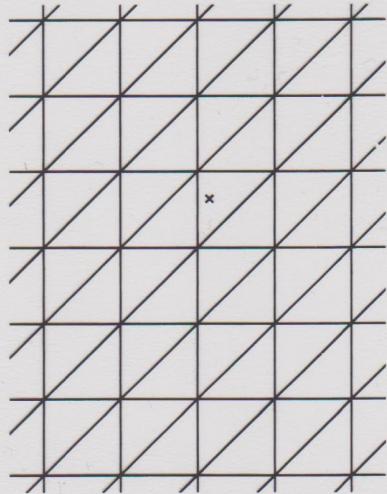
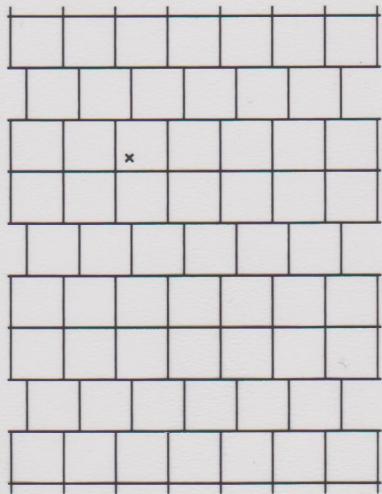
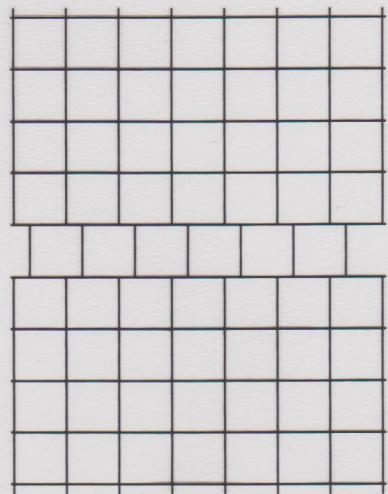
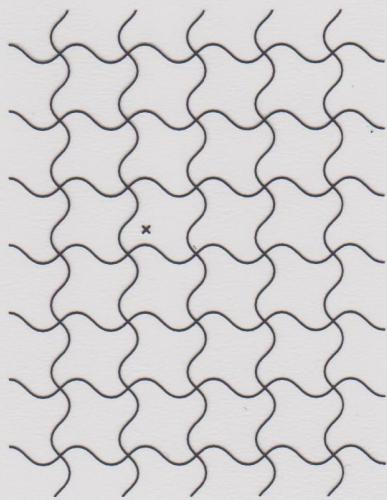
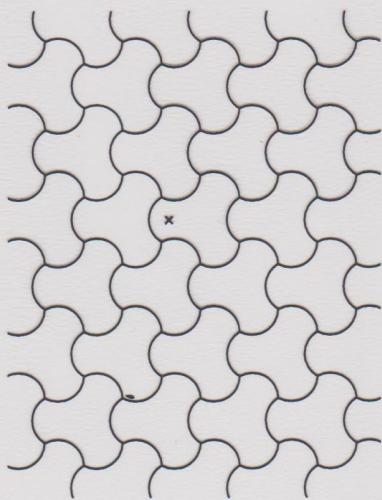
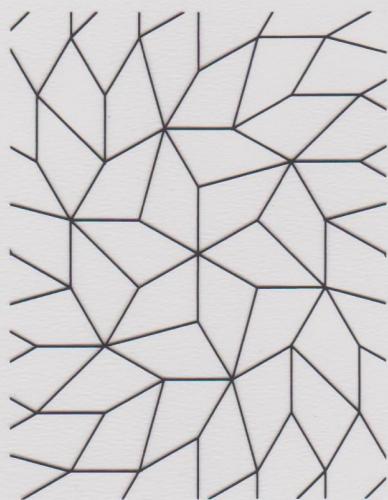


(h)

M336 TILING CARD 4 SIDE 2



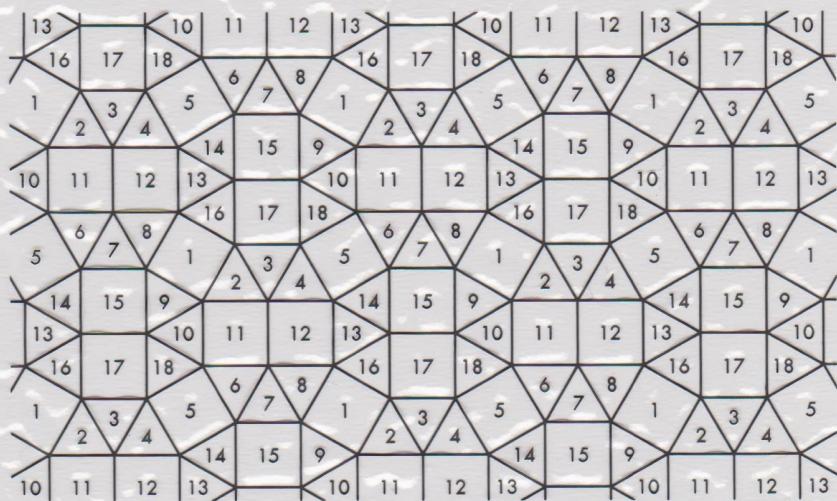
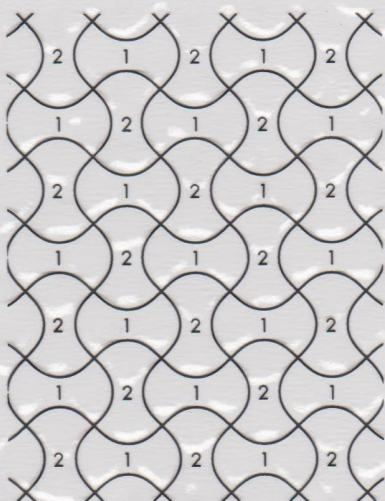
M336 TILING CARD 4 SIDE 1 OVERLAY 1



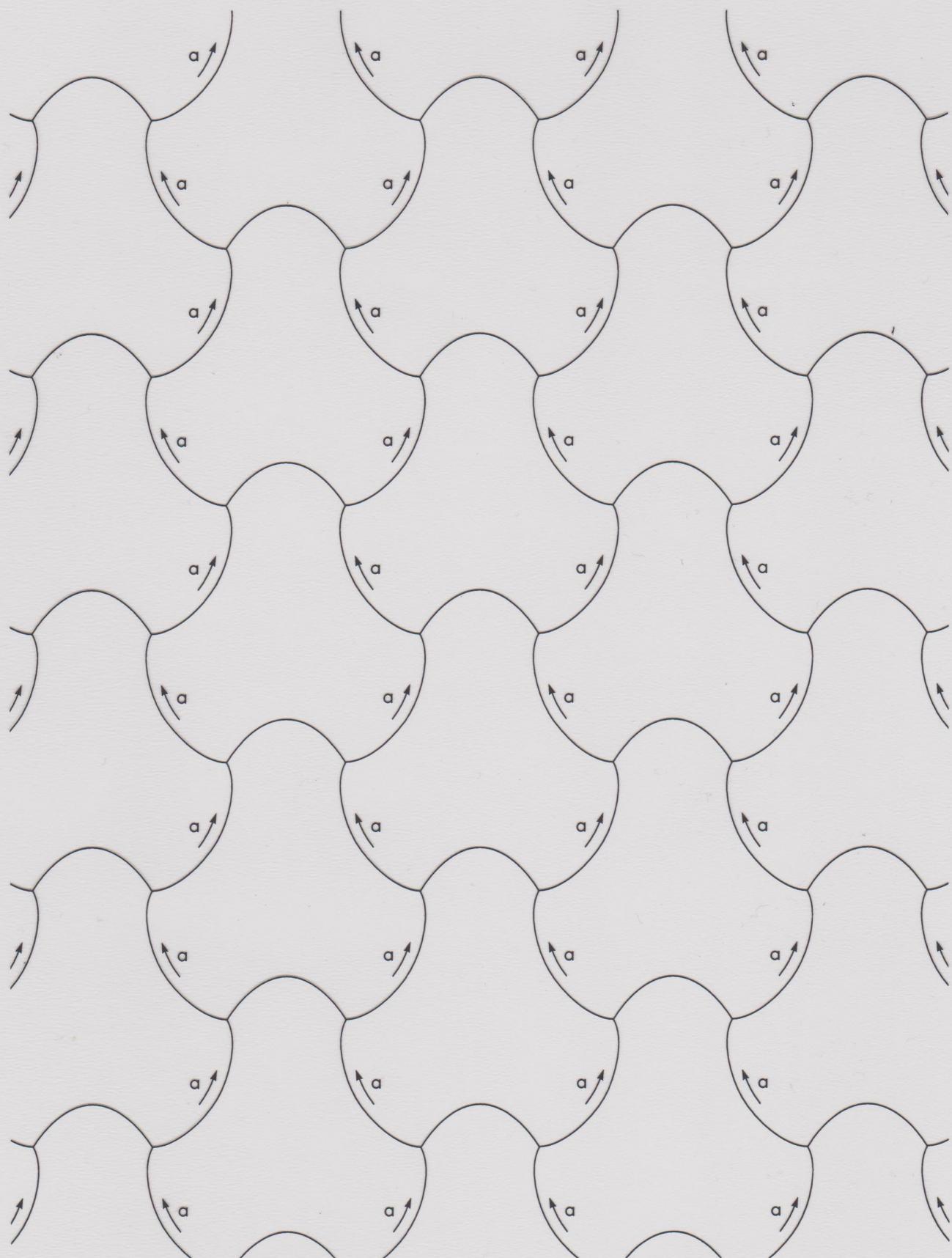
M336 TILING CARD 4 SIDE 1 OVERLAY 2

2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	
1	1	1	1	1	1	1	
2	2	2	2	2	2	2	
3	3	3	3	3	3	3	
1	1	1	1	1	1	1	
2	2	2	2	2	2	2	
3	3	3	3	3	3	3	
1	1	1	1	1	1	1	

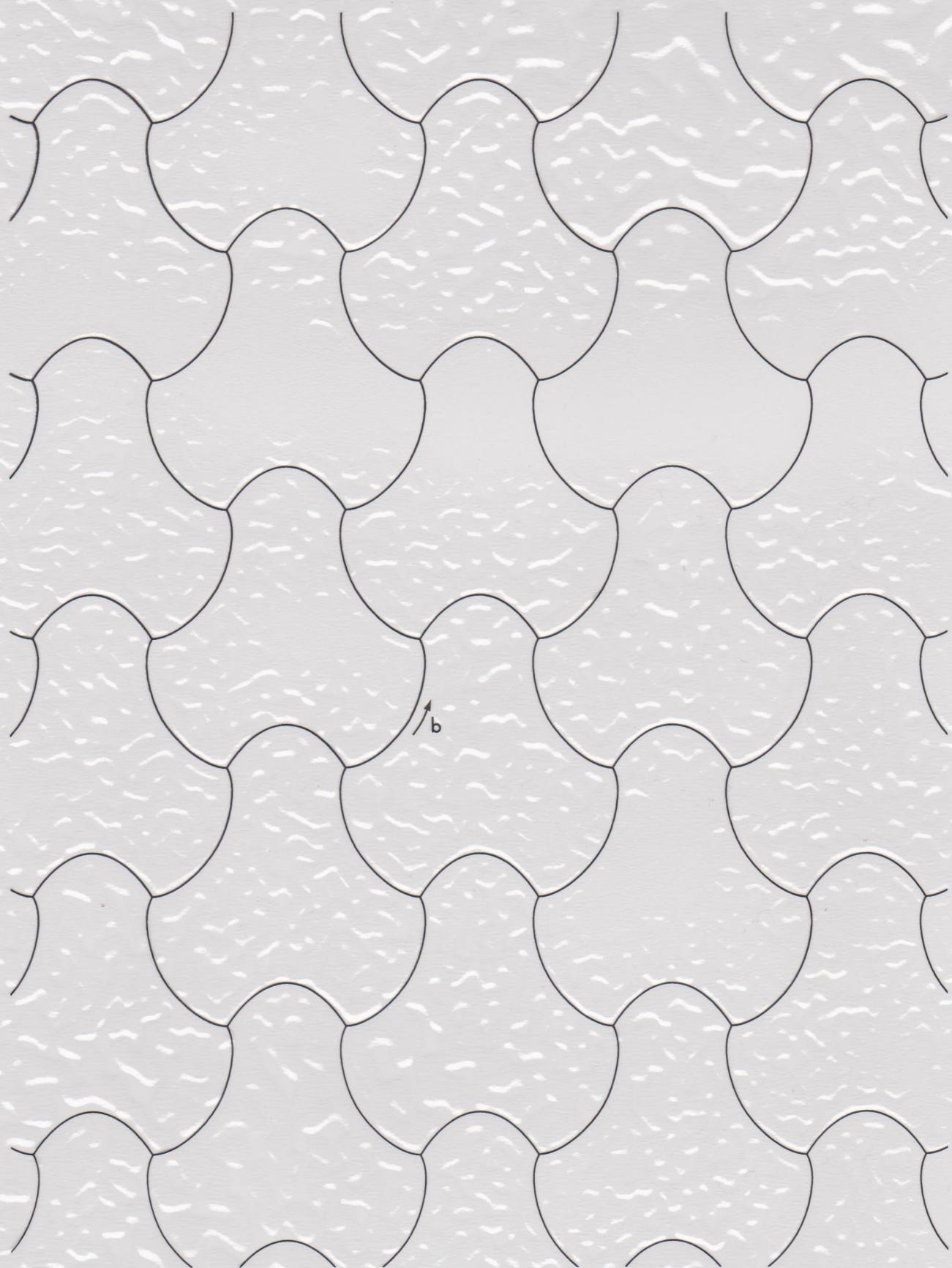
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	
1	1	1	1	1	1	1	
2	2	2	2	2	2	2	
1	1	1	1	1	1	1	
2	2	2	2	2	2	2	
1	1	1	1	1	1	1	
2	2	2	2	2	2	2	



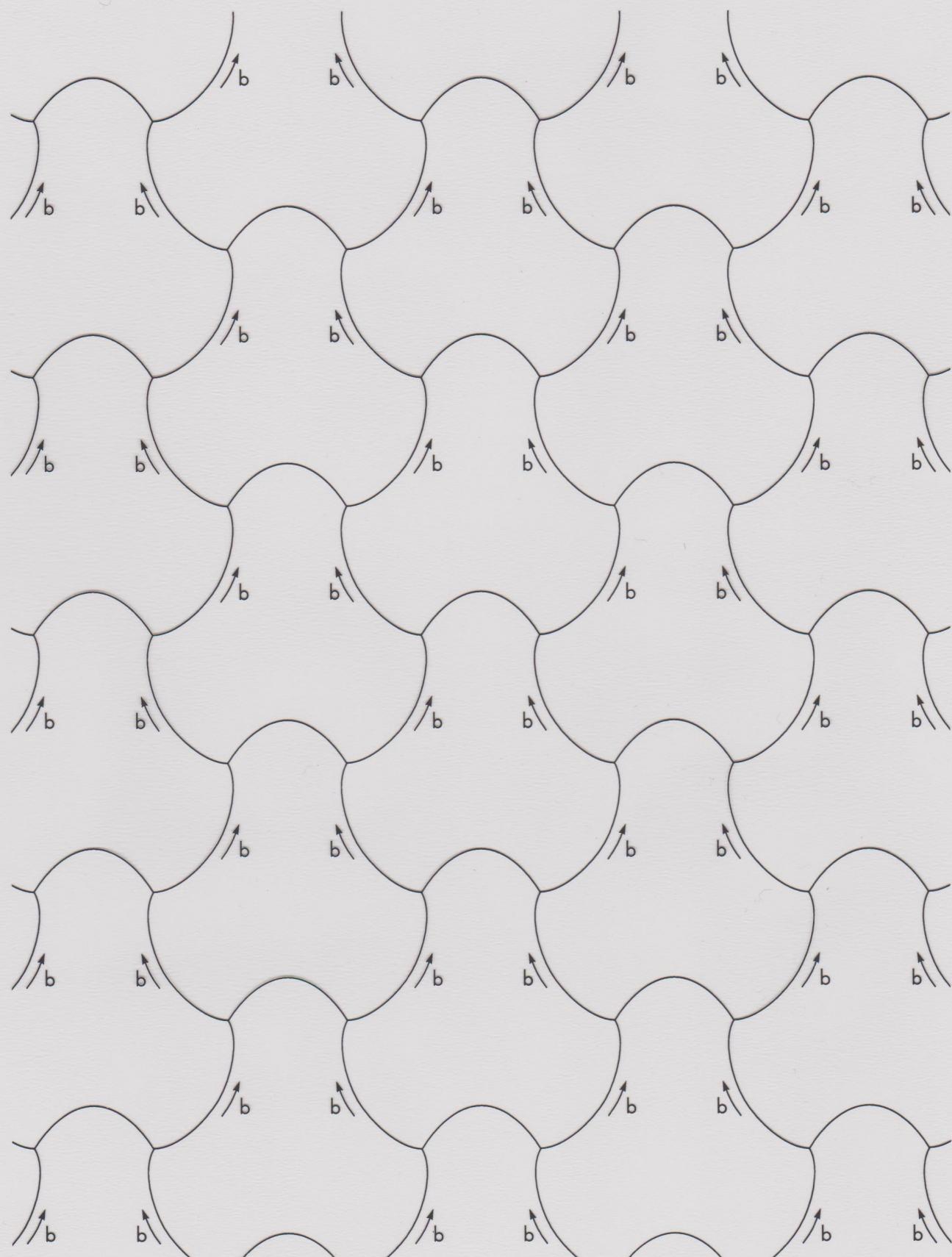
M336 TILING CARD 4 SIDE 2 OVERLAY 1



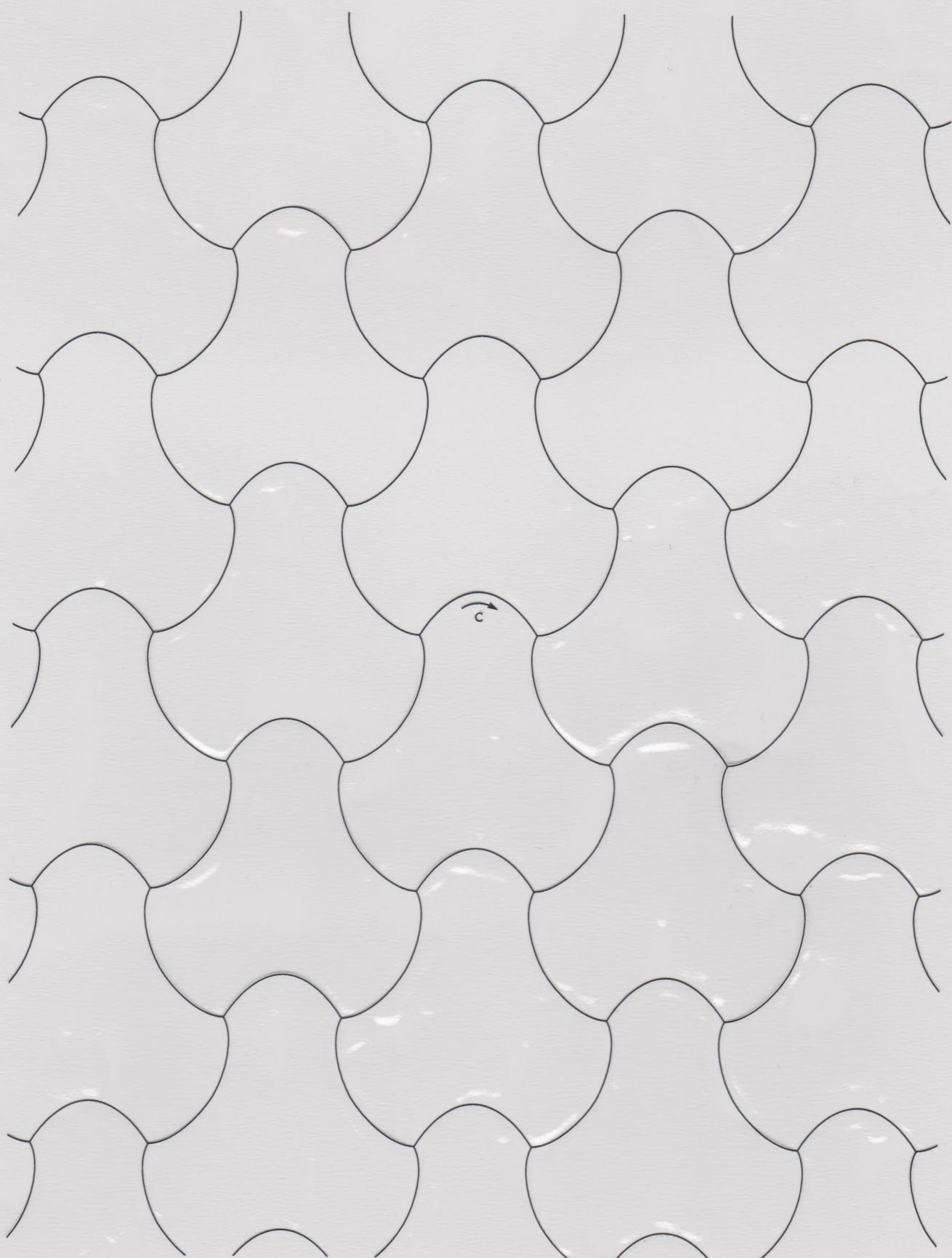
M336 TILING CARD 4 SIDE 2 OVERLAY 2



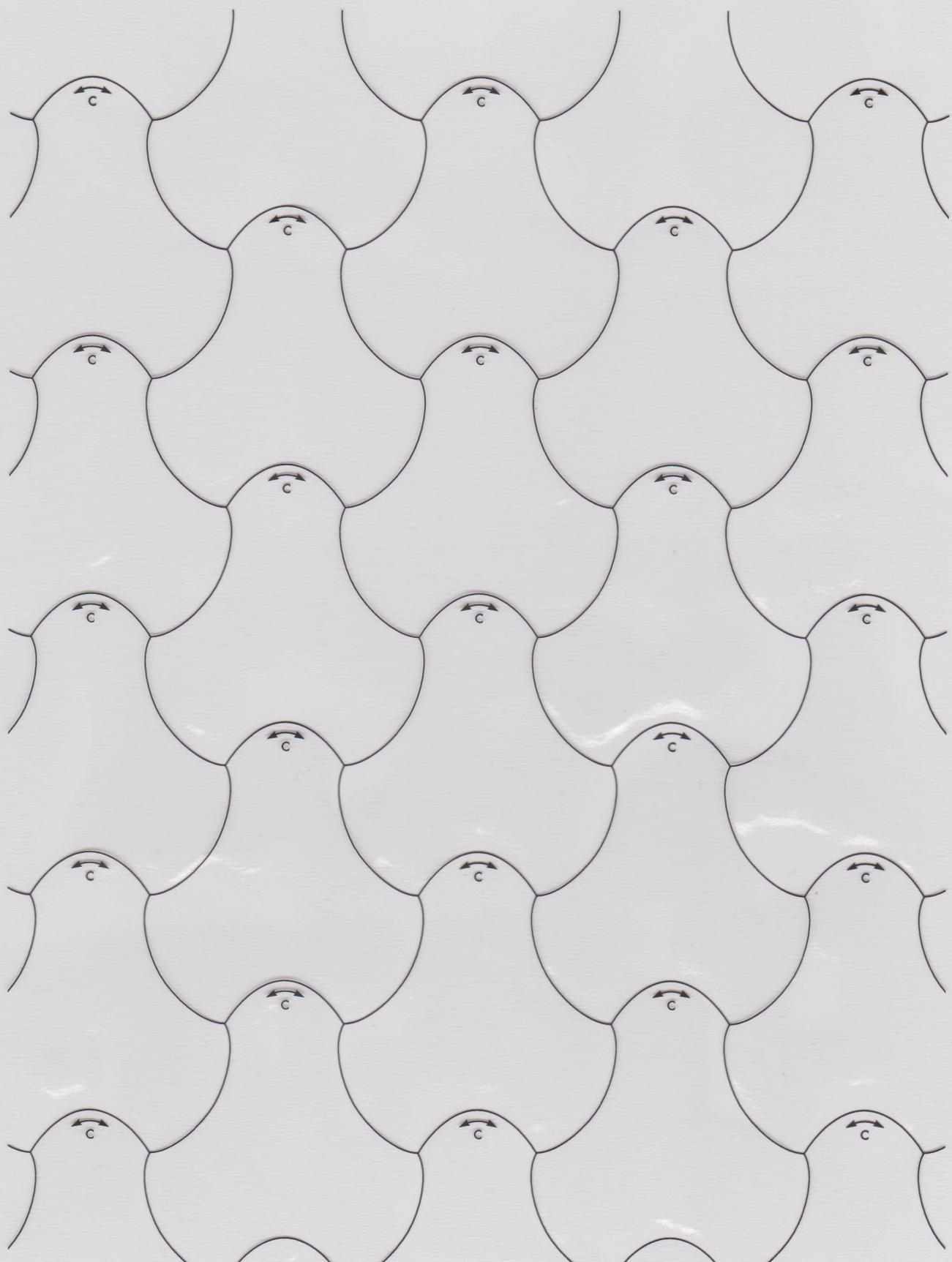
M336 TILING CARD 4 SIDE 2 OVERLAY 3



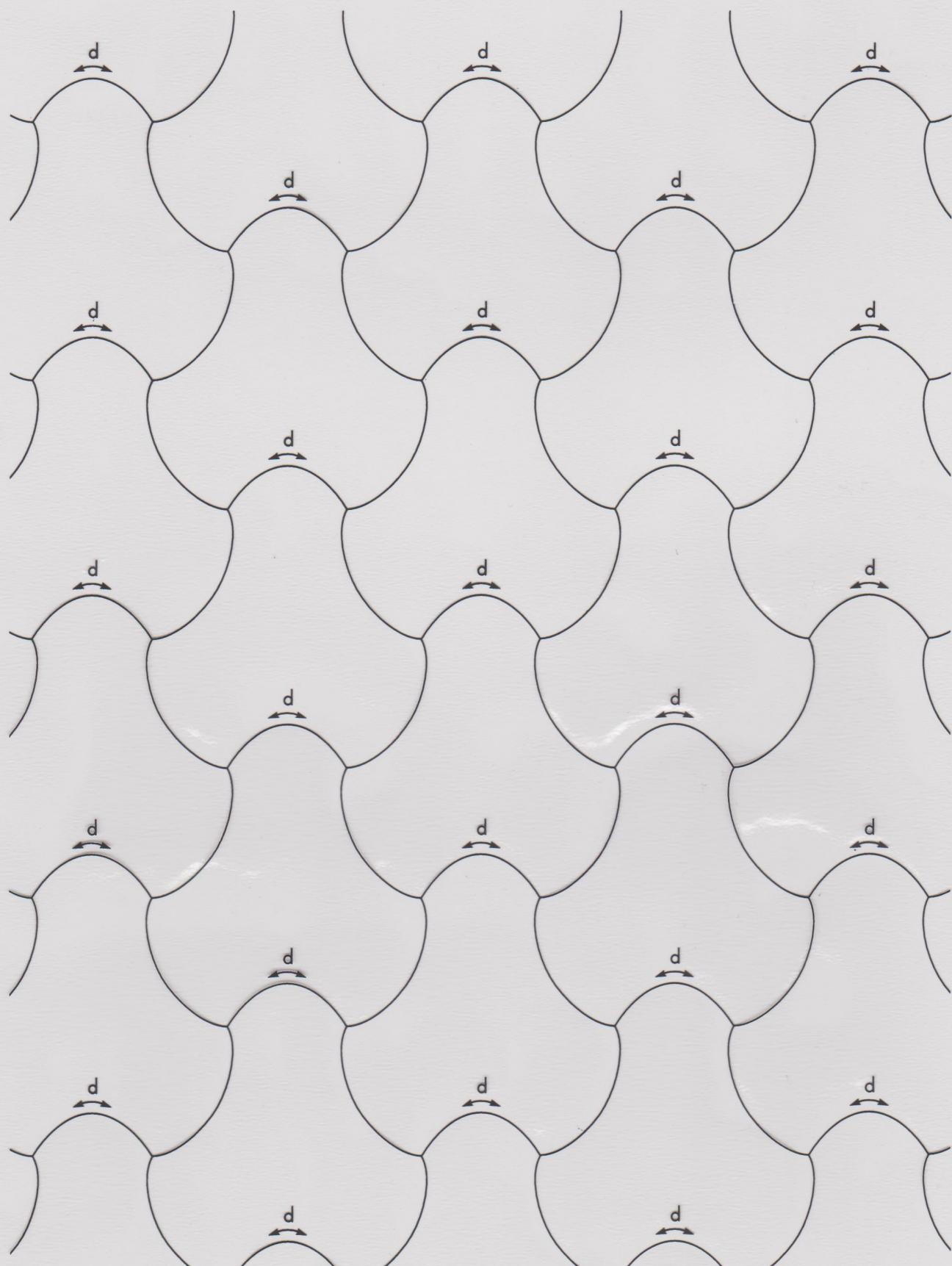
M336 TILING CARD 4 SIDE 2 OVERLAY 4



M336 TILING CARD 4 SIDE 2 OVERLAY 5

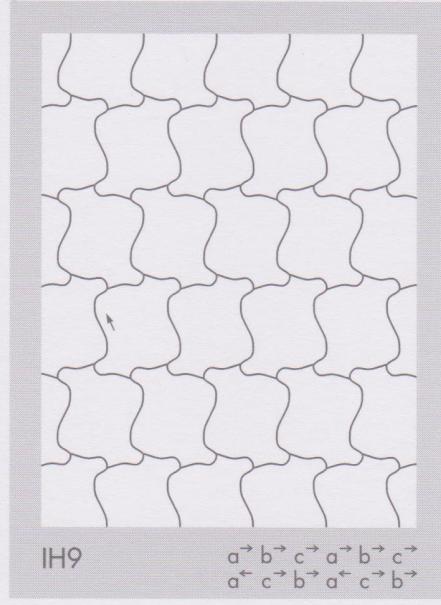
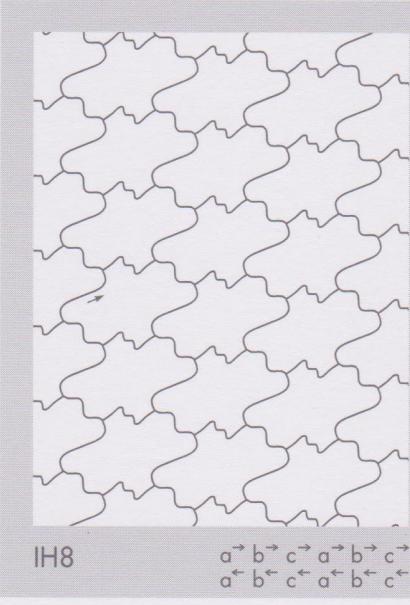
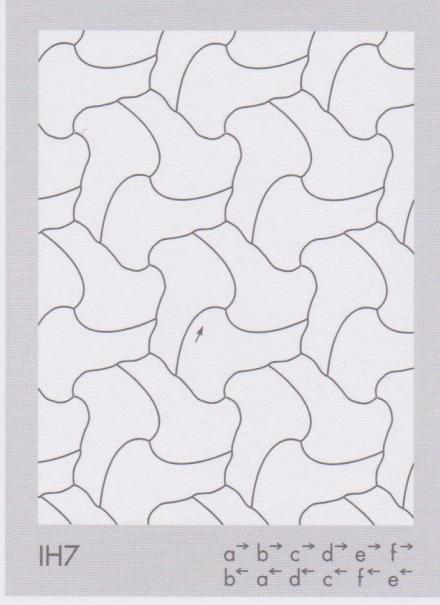
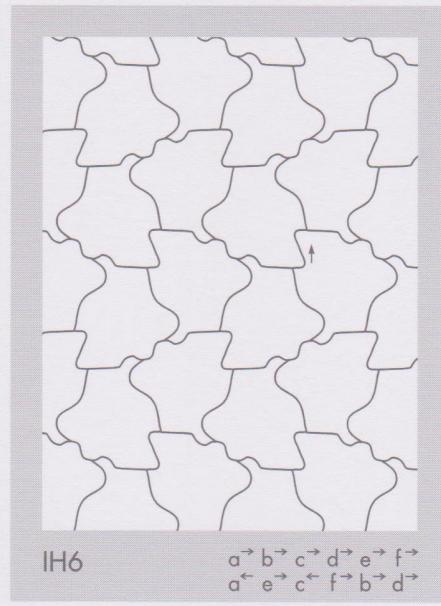
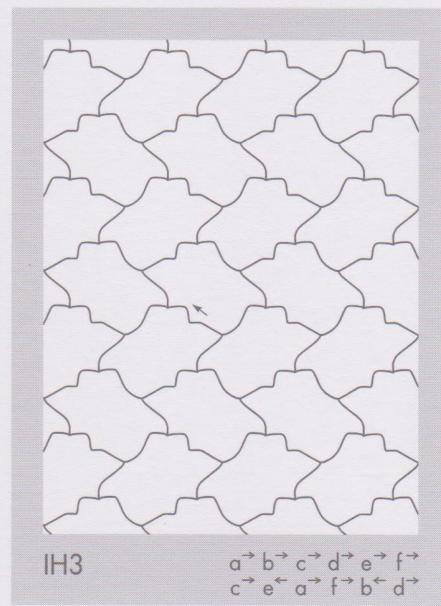
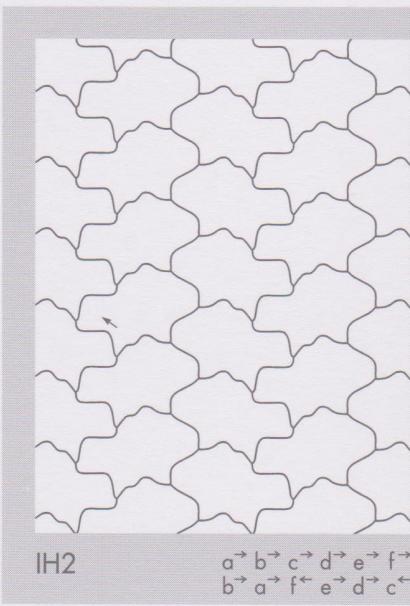
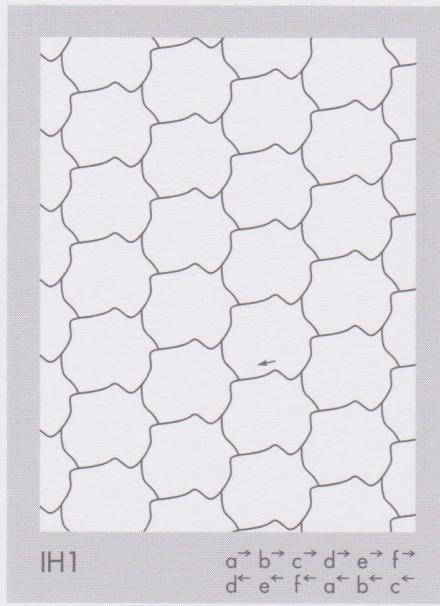


M336 TILING CARD 4 SIDE 2 OVERLAY 6



M336 TILING CARD 5 SIDE 1

Tile type [3,3,3,3,3,3]



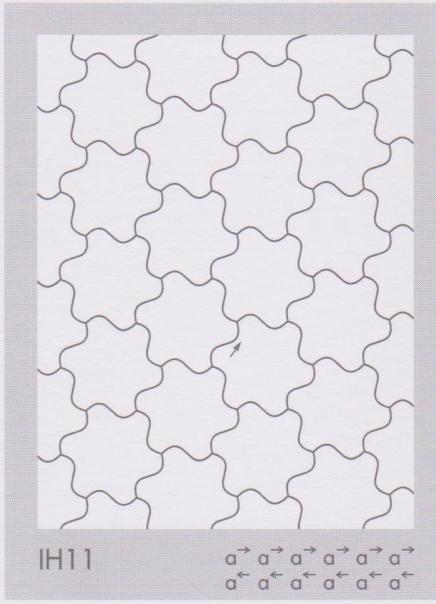
M336 TILING CARD 5 SIDE 2

Tile type [3,3,3,3,3,3]



IH10

$a \rightarrow b \rightarrow a \rightarrow b \rightarrow a \rightarrow b \rightarrow$
 $b \leftarrow a \leftarrow b \leftarrow a \leftarrow b \leftarrow a \leftarrow$



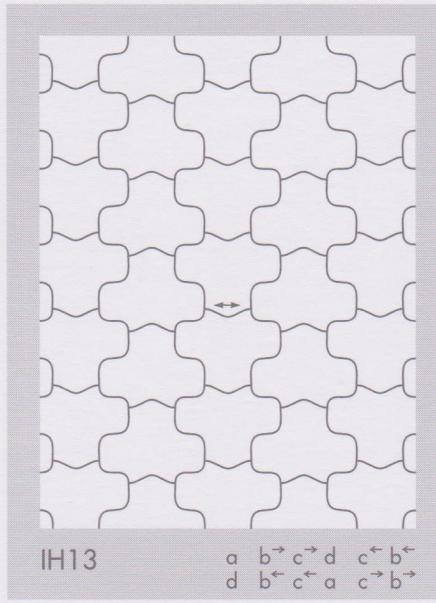
IH11

$a \rightarrow a \rightarrow a \rightarrow a \rightarrow a \rightarrow a \rightarrow$
 $a \leftarrow a \leftarrow a \leftarrow a \leftarrow a \leftarrow a \leftarrow$



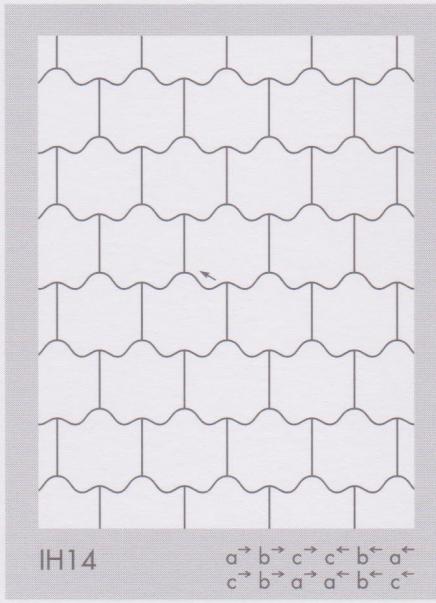
IH12

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow c \leftarrow b \leftarrow a \leftarrow$
 $d \rightarrow c \rightarrow b \rightarrow a \rightarrow b \rightarrow c \rightarrow$



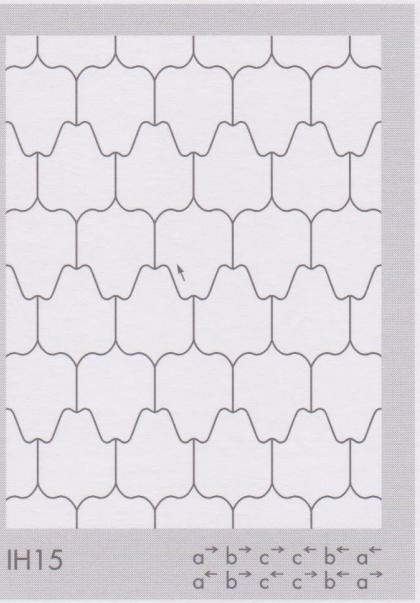
IH13

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow c \leftarrow b \leftarrow$
 $d \rightarrow b \leftarrow c \leftarrow a \rightarrow c \rightarrow b \rightarrow$



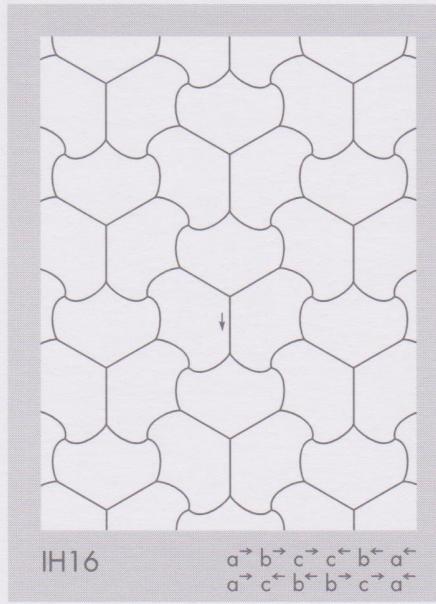
IH14

$a \rightarrow b \rightarrow c \rightarrow c \leftarrow b \leftarrow a \leftarrow$
 $c \rightarrow b \rightarrow a \rightarrow a \leftarrow b \leftarrow c \leftarrow$



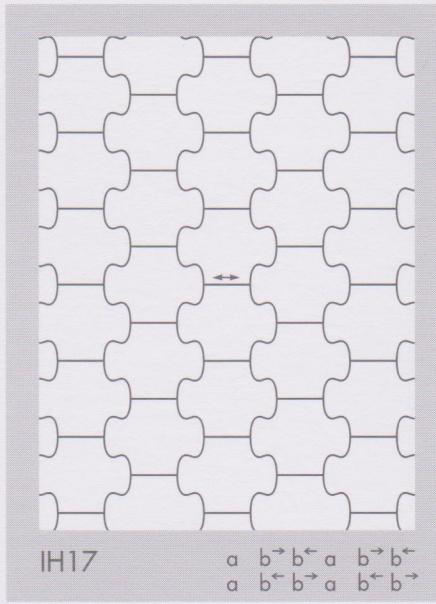
IH15

$a \rightarrow b \rightarrow c \rightarrow c \leftarrow b \leftarrow a \leftarrow$
 $a \leftarrow b \rightarrow c \leftarrow c \leftarrow b \rightarrow a \rightarrow$



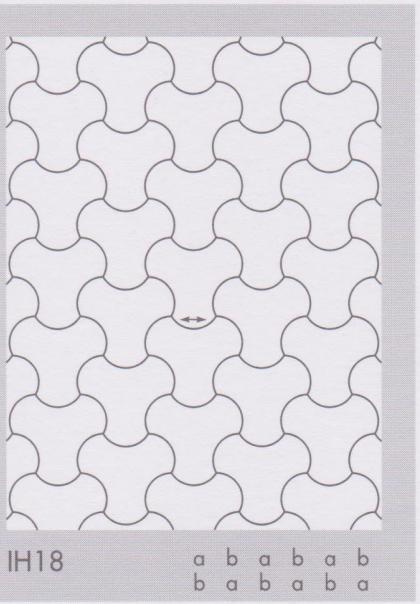
IH16

$a \rightarrow b \rightarrow c \rightarrow c \leftarrow b \leftarrow a \leftarrow$
 $a \rightarrow c \leftarrow b \leftarrow b \rightarrow c \rightarrow a \leftarrow$



IH17

$a \rightarrow b \rightarrow b \leftarrow a \rightarrow b \rightarrow b \leftarrow$
 $a \rightarrow b \leftarrow b \rightarrow a \rightarrow b \leftarrow b \rightarrow$

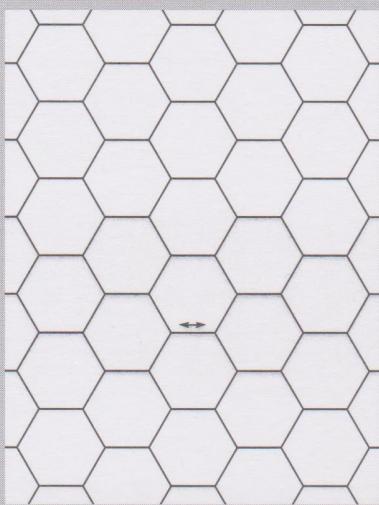


IH18

$a \rightarrow b \rightarrow a \rightarrow b \rightarrow a \rightarrow b \rightarrow$
 $b \rightarrow a \rightarrow b \rightarrow a \rightarrow b \rightarrow a \rightarrow$

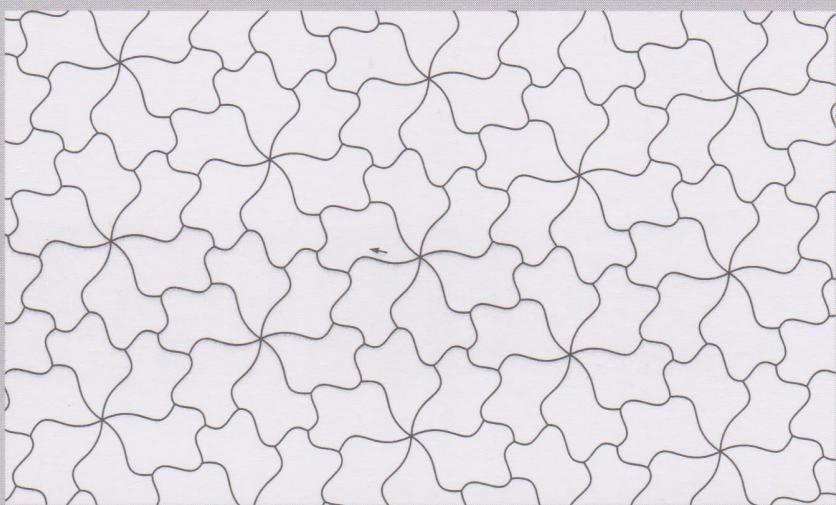
M336 TILING CARD 6 SIDE 1

Tile types [3,3,3,3,3,3],
[3,3,3,3,6], [3,3,3,4,4]



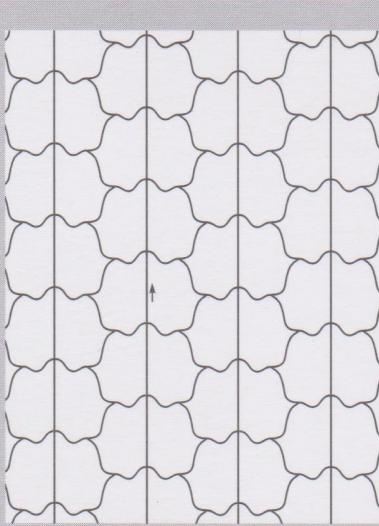
IH20

$\begin{matrix} a & a & a & a & a & a \\ a & a & a & a & a & a \end{matrix}$



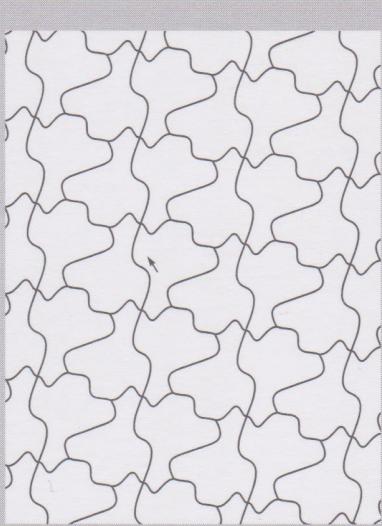
IH21

$\begin{matrix} a \rightarrow & b \rightarrow & c \rightarrow & d \rightarrow & e \rightarrow \\ a \leftarrow & c \leftarrow & b \leftarrow & d \leftarrow & a \leftarrow \end{matrix}$



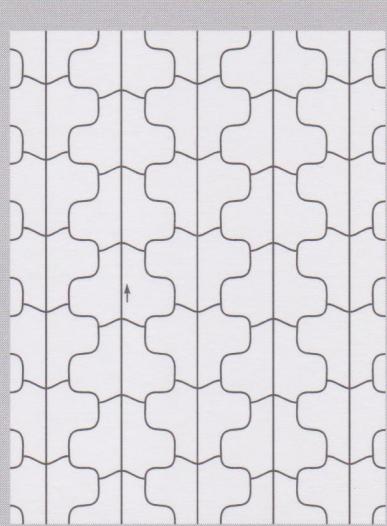
IH22

$\begin{matrix} a \rightarrow & b \rightarrow & c \rightarrow & d \rightarrow & e \rightarrow \\ a \rightarrow & e \leftarrow & d \rightarrow & c \leftarrow & b \leftarrow \end{matrix}$



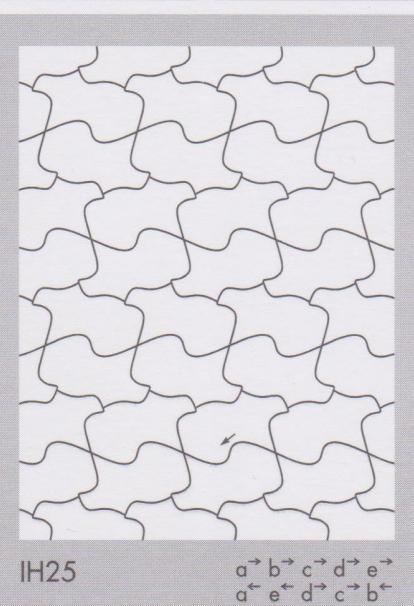
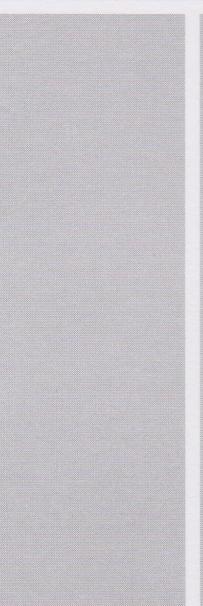
IH23

$\begin{matrix} a \rightarrow & b \rightarrow & c \rightarrow & d \rightarrow & e \rightarrow \\ a \leftarrow & e \leftarrow & c \leftarrow & d \leftarrow & b \leftarrow \end{matrix}$



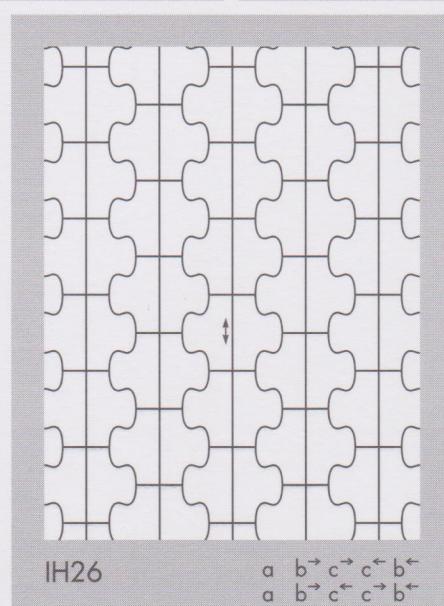
IH24

$\begin{matrix} a \rightarrow & b \rightarrow & c \rightarrow & d \rightarrow & e \rightarrow \\ a \rightarrow & e \leftarrow & c \leftarrow & d \leftarrow & b \leftarrow \end{matrix}$



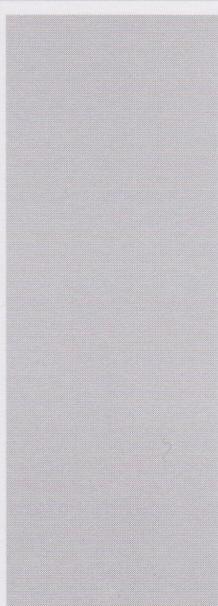
IH25

$\begin{matrix} a \rightarrow & b \rightarrow & c \rightarrow & d \rightarrow & e \rightarrow \\ a \leftarrow & e \leftarrow & d \rightarrow & c \rightarrow & b \leftarrow \end{matrix}$



IH26

$\begin{matrix} a & b \rightarrow & c \rightarrow & c \leftarrow & b \leftarrow \\ a & b \rightarrow & c \leftarrow & c \rightarrow & b \leftarrow \end{matrix}$



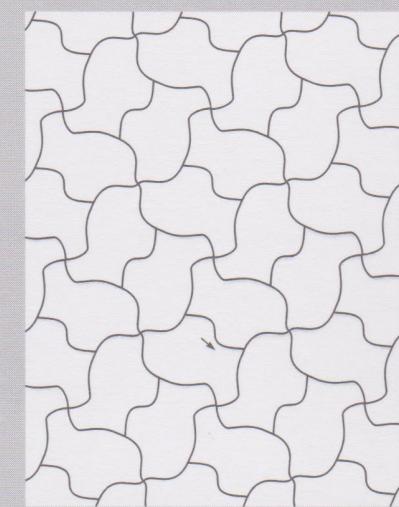
M336 TILING CARD 6 SIDE 2

Tile types [3,3,4,3,4], [3,4,6,4]



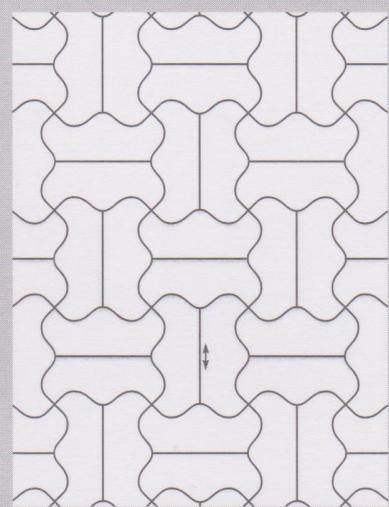
IH27

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow e \rightarrow$
 $a \leftarrow d \rightarrow e \rightarrow b \rightarrow c \rightarrow$



IH28

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow e \rightarrow$
 $a \leftarrow c \leftarrow b \leftarrow e \leftarrow d \leftarrow$



IH29

$a \rightarrow b \rightarrow c \rightarrow c \leftarrow b \leftarrow$
 $a \rightarrow c \leftarrow b \leftarrow b \rightarrow c \rightarrow$



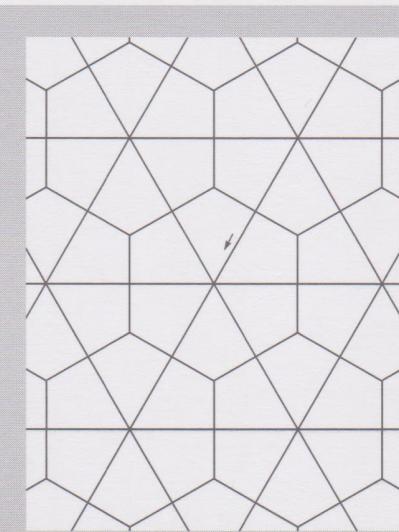
IH30

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $a \rightarrow b \rightarrow d \leftarrow c \leftarrow$



IH31

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $b \leftarrow a \leftarrow d \leftarrow c \leftarrow$

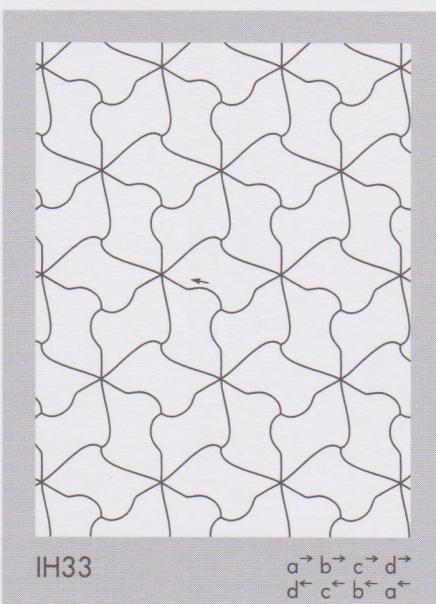
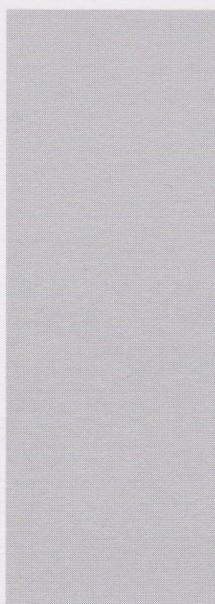


IH32

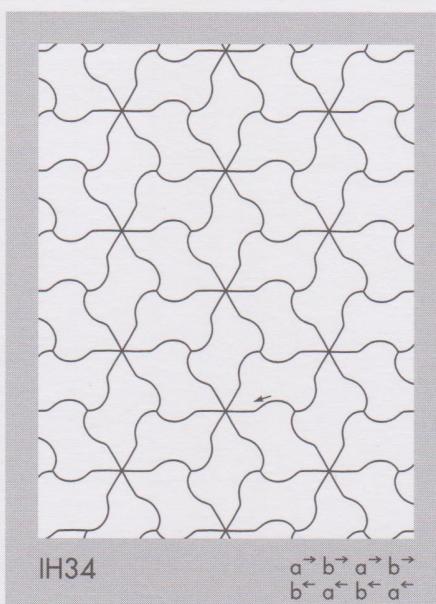
$a \rightarrow a \leftarrow b \rightarrow b \leftarrow$
 $a \rightarrow a \leftarrow b \rightarrow b \leftarrow$

M336 TILING CARD 7 SIDE 1

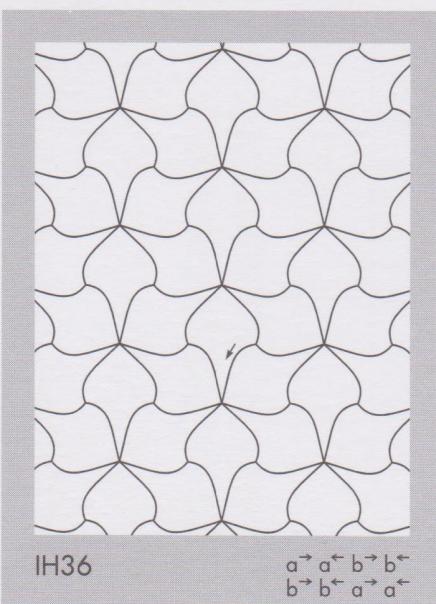
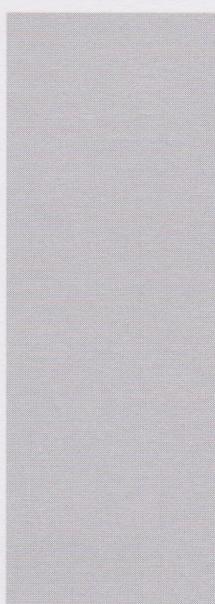
Tile types [3,6,3,6], [3,12,12]



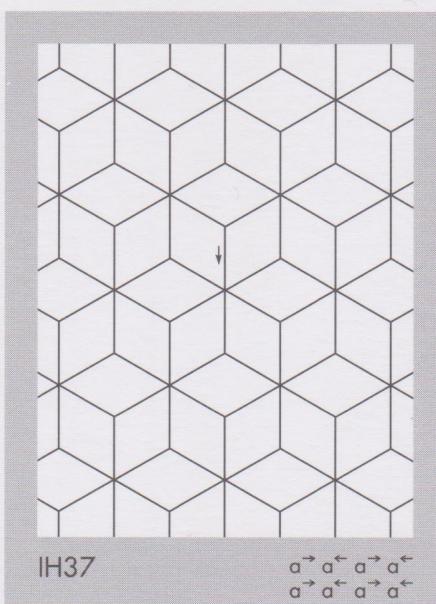
IH33



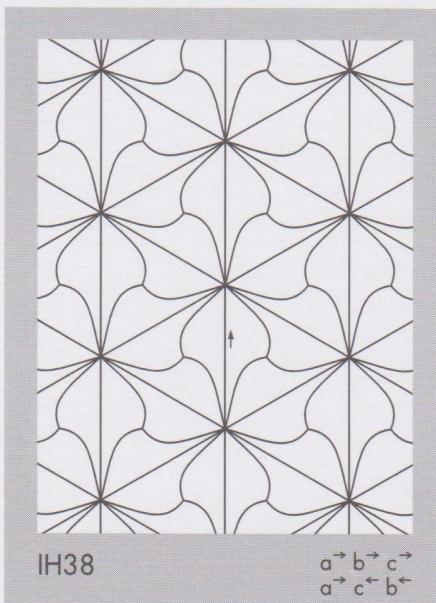
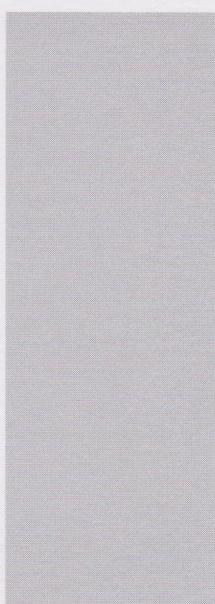
IH34



IH36

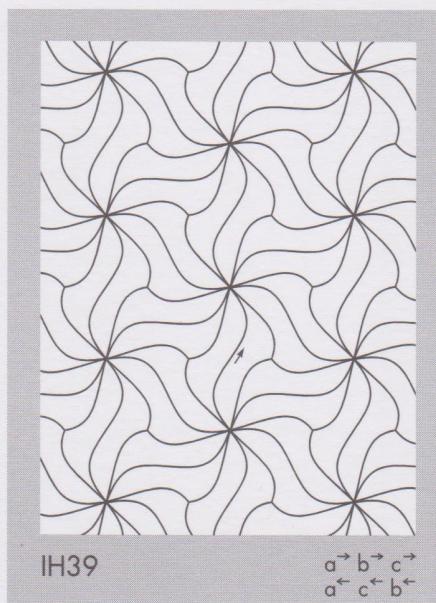


IH37



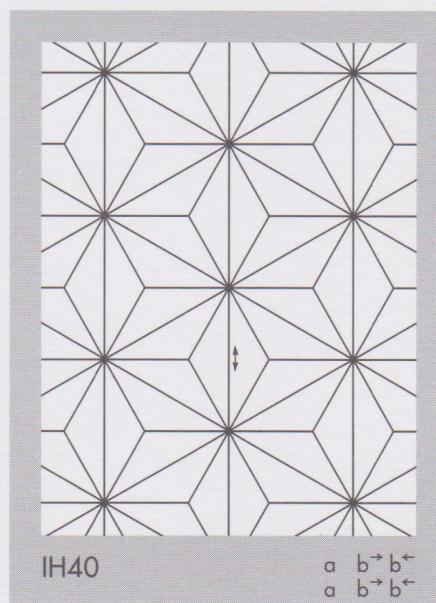
IH38

$a \rightarrow b \rightarrow c \rightarrow$
 $a \leftarrow c \leftarrow b \leftarrow$



IH39

$a \rightarrow b \rightarrow c \rightarrow$
 $a \leftarrow c \leftarrow b \leftarrow$

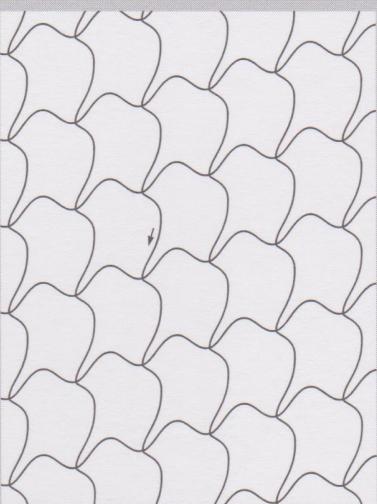


IH40

$a \rightarrow b \rightarrow b \leftarrow$
 $a \rightarrow b \rightarrow b \leftarrow$

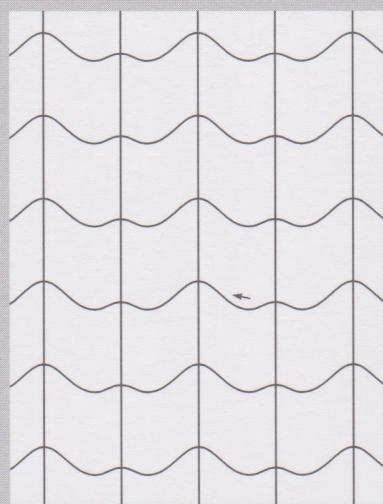
M336 TILING CARD 7 SIDE 2

Tile type [4,4,4,4]



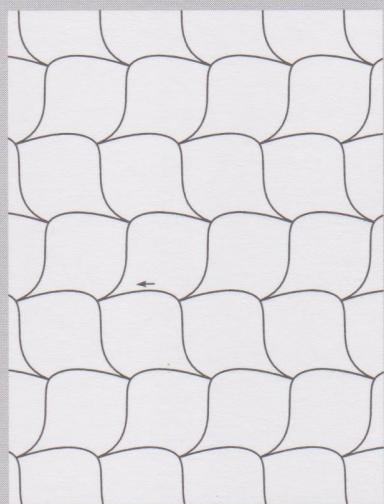
IH41

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \leftarrow d \leftarrow a \leftarrow b \leftarrow$



IH42

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \leftarrow b \rightarrow a \leftarrow d \rightarrow$



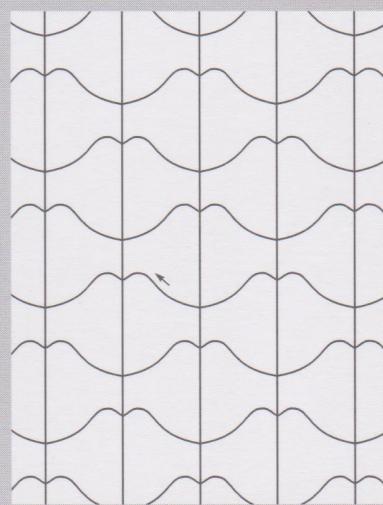
IH43

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \rightarrow d \leftarrow a \rightarrow b \leftarrow$



IH44

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $b \rightarrow a \rightarrow d \rightarrow c \rightarrow$



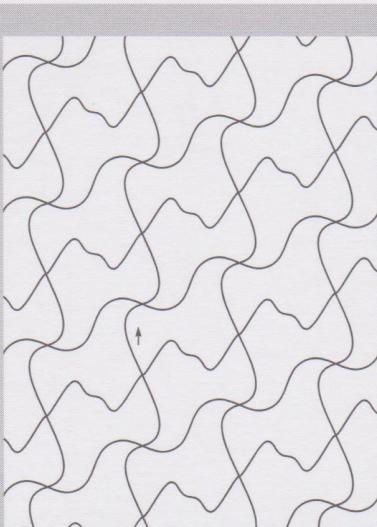
IH45

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \rightarrow b \rightarrow a \rightarrow d \rightarrow$



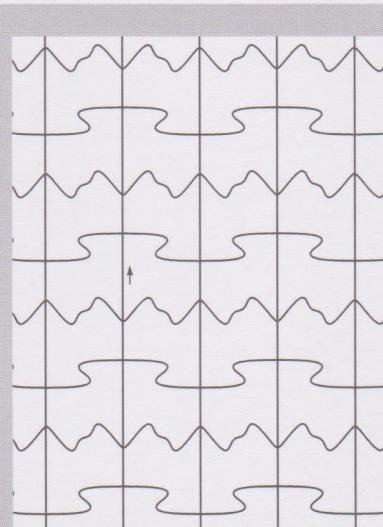
IH46

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $a \leftarrow b \rightarrow c \leftarrow d \leftarrow$



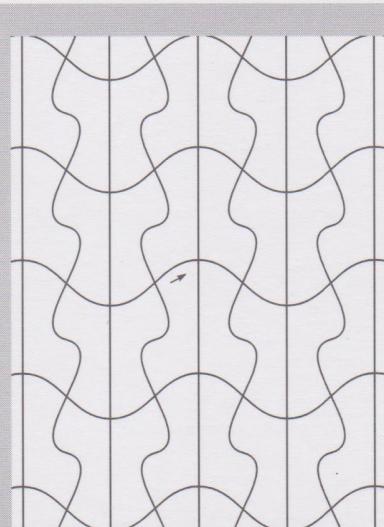
IH47

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \leftarrow b \leftarrow a \leftarrow d \leftarrow$



IH49

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $a \rightarrow b \leftarrow c \rightarrow d \leftarrow$



IH50

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \rightarrow b \rightarrow a \leftarrow d \leftarrow$

M336 TILING CARD 8 SIDE 1

Tile type [4,4,4,4]



IH51

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \leftarrow b \leftarrow a \rightarrow d \leftarrow$



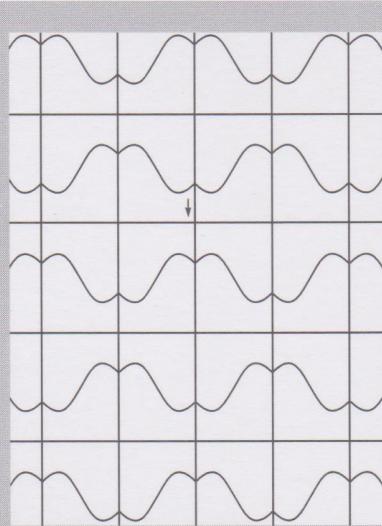
IH52

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $c \rightarrow d \rightarrow a \rightarrow b \rightarrow$



IH53

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $b \rightarrow a \rightarrow c \leftarrow d \leftarrow$



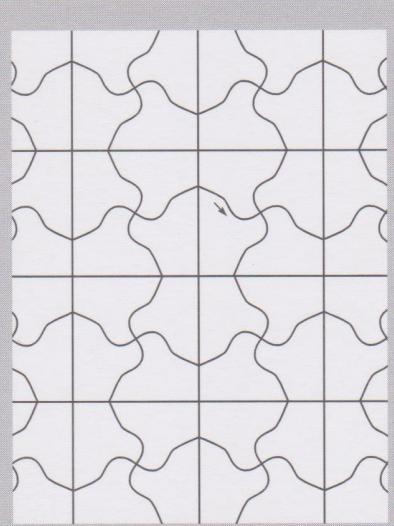
IH54

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $a \rightarrow b \leftarrow c \rightarrow d \leftarrow$



IH55

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $b \leftarrow a \leftarrow d \leftarrow c \leftarrow$



IH56

$a \rightarrow b \rightarrow c \rightarrow d \rightarrow$
 $b \leftarrow a \leftarrow c \rightarrow d \rightarrow$



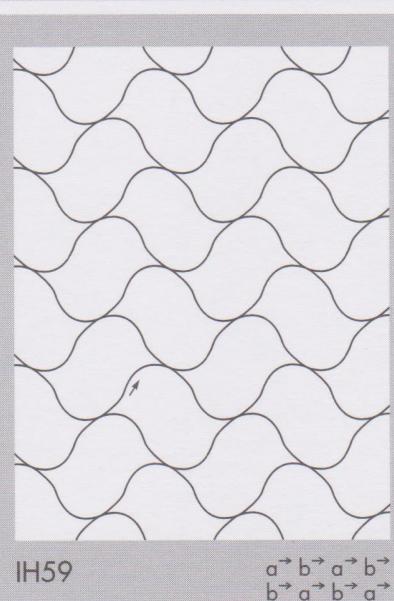
IH57

$a \rightarrow b \rightarrow a \rightarrow b \rightarrow$
 $a \leftarrow b \leftarrow a \leftarrow b \leftarrow$



IH58

$a \rightarrow b \rightarrow a \rightarrow b \rightarrow$
 $a \rightarrow b \leftarrow a \rightarrow b \leftarrow$

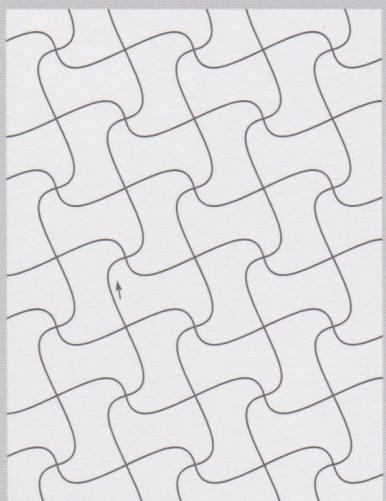


IH59

$a \rightarrow b \rightarrow a \rightarrow b \rightarrow$
 $b \rightarrow a \rightarrow b \rightarrow a \rightarrow$

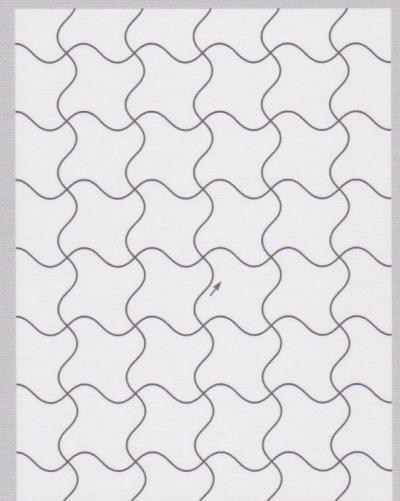
M336 TILING CARD 8 SIDE 2

Tile type [4,4,4,4]



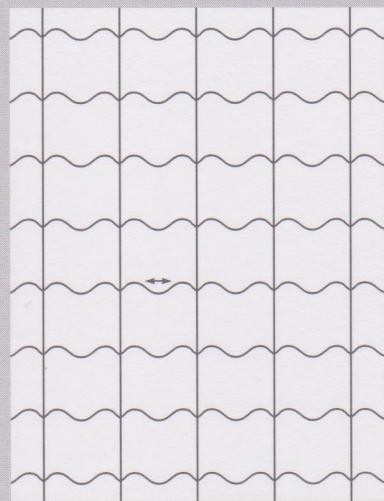
IH61

$$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & a^{\rightarrow} & b^{\rightarrow} \\ b^{\leftarrow} & a^{\leftarrow} & b^{\leftarrow} & a^{\leftarrow} \end{matrix}$$



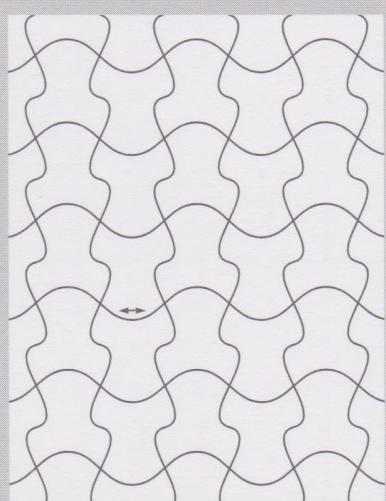
IH62

$$\begin{matrix} a^{\rightarrow} & a^{\rightarrow} & a^{\rightarrow} & a^{\rightarrow} \\ a^{\leftarrow} & a^{\leftarrow} & a^{\leftarrow} & a^{\leftarrow} \end{matrix}$$



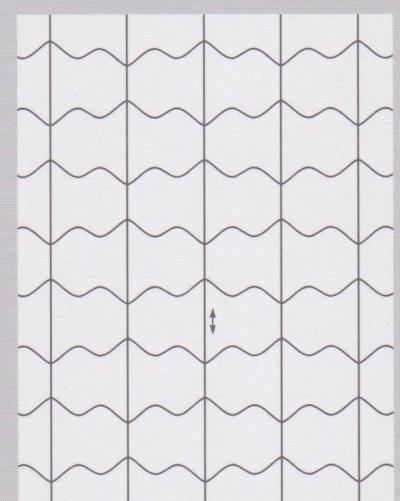
IH63

$$\begin{matrix} a & b^{\rightarrow} & c & b^{\leftarrow} \\ c & b^{\rightarrow} & a & b^{\leftarrow} \end{matrix}$$



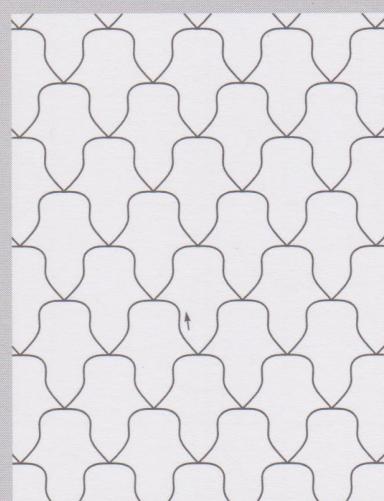
IH66

$$\begin{matrix} a & b^{\rightarrow} & c & b^{\leftarrow} \\ c & b^{\leftarrow} & a & b^{\rightarrow} \end{matrix}$$



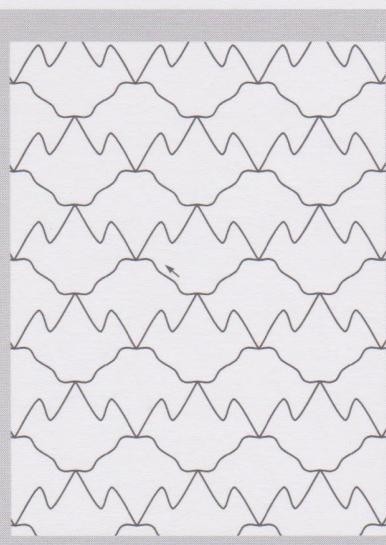
IH67

$$\begin{matrix} a & b^{\rightarrow} & c & b^{\leftarrow} \\ a & b^{\leftarrow} & c & b^{\rightarrow} \end{matrix}$$



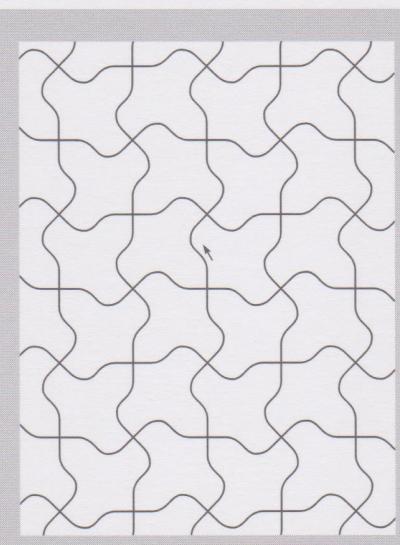
IH68

$$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & b^{\leftarrow} & a^{\leftarrow} \\ b^{\rightarrow} & a^{\rightarrow} & a^{\leftarrow} & b^{\leftarrow} \end{matrix}$$



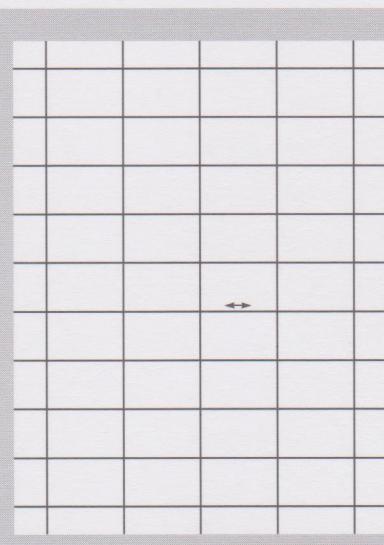
IH69

$$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & b^{\leftarrow} & a^{\leftarrow} \\ a^{\leftarrow} & b^{\leftarrow} & b^{\rightarrow} & a^{\rightarrow} \end{matrix}$$



IH71

$$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & b^{\leftarrow} & a^{\leftarrow} \\ b^{\leftarrow} & a^{\leftarrow} & a^{\rightarrow} & b^{\rightarrow} \end{matrix}$$



IH72

$$\begin{matrix} a & b & a & b \\ a & b & a & b \end{matrix}$$

M336 TILING CARD 9 SIDE 1

Tile types [4,4,4,4], [4,6,12], [4,8,8]



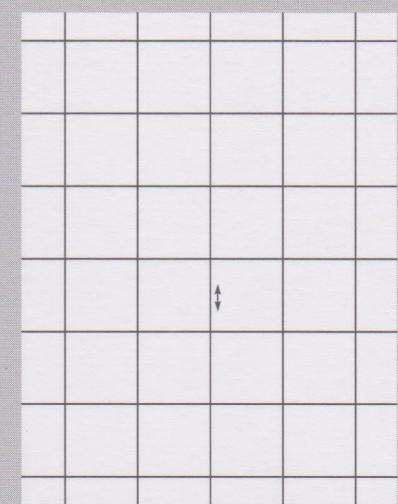
IH73

$\begin{matrix} a & b & a & b \\ b & a & b & a \end{matrix}$



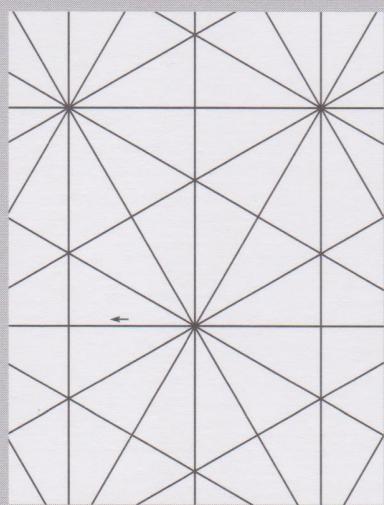
IH74

$\begin{matrix} a^{\rightarrow} & a^{\leftarrow} & a^{\rightarrow} & a^{\leftarrow} \\ a^{\leftarrow} & a^{\rightarrow} & a^{\leftarrow} & a^{\rightarrow} \end{matrix}$



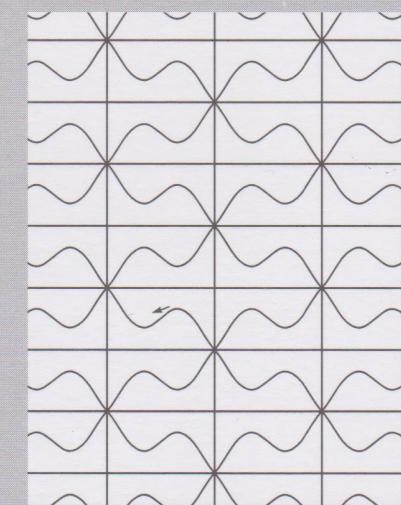
IH76

$\begin{matrix} a & a & a & a \\ a & a & a & a \end{matrix}$



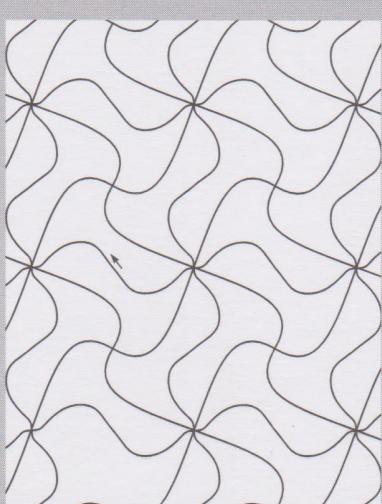
IH77

$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & c^{\rightarrow} \\ a^{\rightarrow} & b^{\rightarrow} & c^{\rightarrow} \end{matrix}$



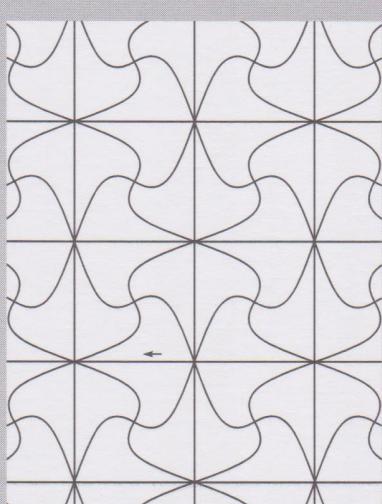
IH78

$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & c^{\rightarrow} \\ a^{\leftarrow} & b^{\rightarrow} & c^{\rightarrow} \end{matrix}$



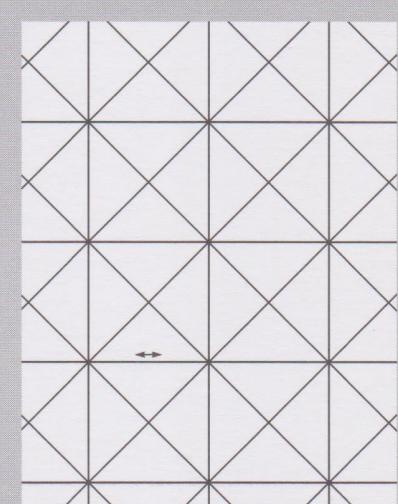
IH79

$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & c^{\rightarrow} \\ a^{\leftarrow} & c^{\leftarrow} & b^{\leftarrow} \end{matrix}$



IH81

$\begin{matrix} a^{\rightarrow} & b^{\rightarrow} & c^{\rightarrow} \\ a^{\rightarrow} & c^{\leftarrow} & b^{\leftarrow} \end{matrix}$

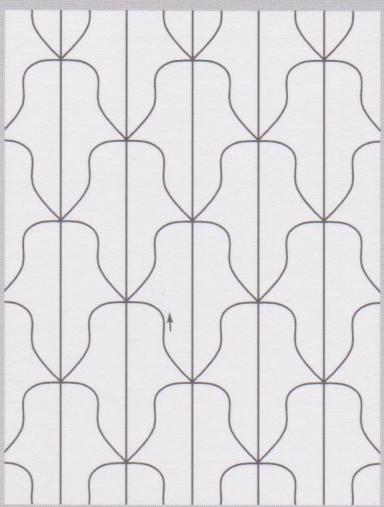


IH82

$\begin{matrix} a & b^{\rightarrow} & b^{\leftarrow} \\ a & b^{\rightarrow} & b^{\leftarrow} \end{matrix}$

M336 TILING CARD 9 SIDE 2

Tile type [6,6,6]



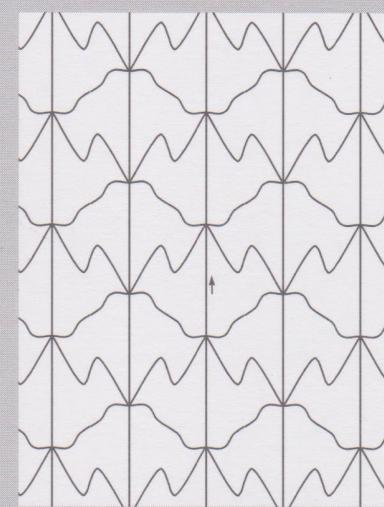
IH83

$a \rightarrow b \rightarrow c \rightarrow$
 $b \rightarrow a \rightarrow c \leftarrow$



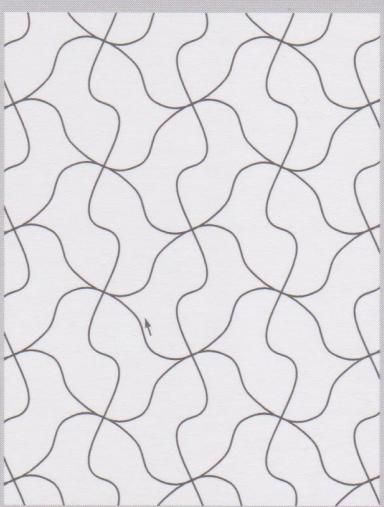
IH84

$a \rightarrow b \rightarrow c \rightarrow$
 $a \leftarrow b \leftarrow c \leftarrow$



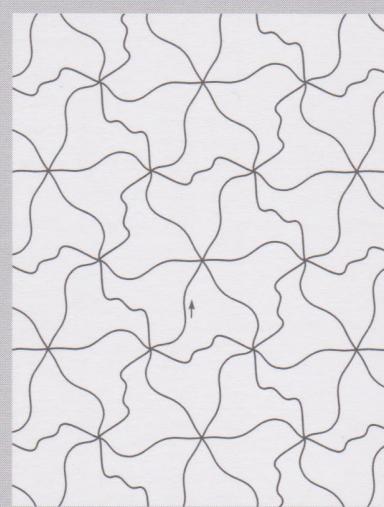
IH85

$a \rightarrow b \rightarrow c \rightarrow$
 $a \rightarrow b \leftarrow c \leftarrow$



IH86

$a \rightarrow b \rightarrow c \rightarrow$
 $b \rightarrow a \leftarrow c \leftarrow$



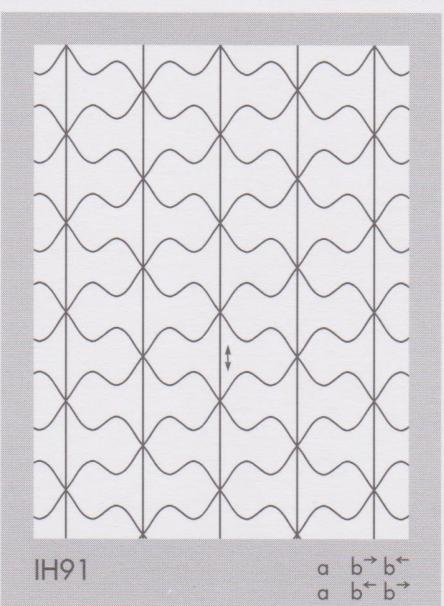
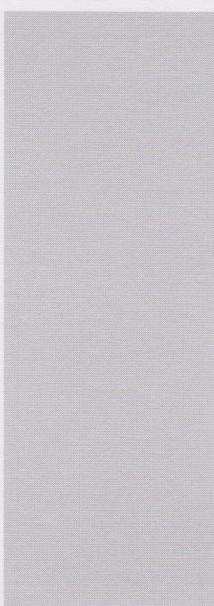
IH88

$a \rightarrow b \rightarrow c \rightarrow$
 $b \leftarrow a \leftarrow c \leftarrow$



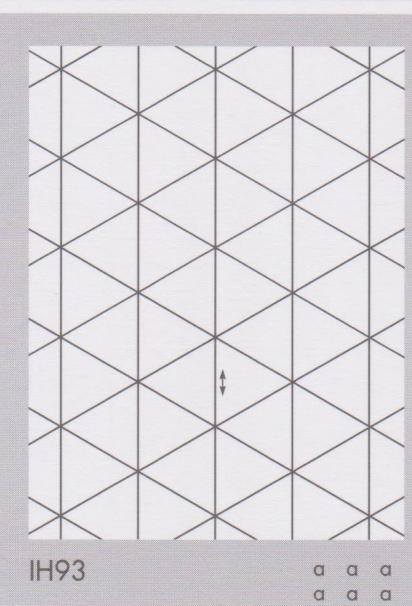
IH90

$a \rightarrow a \rightarrow a \rightarrow$
 $a \leftarrow a \leftarrow a \leftarrow$



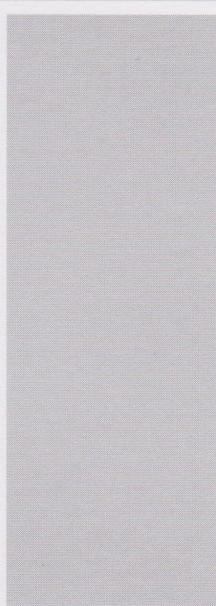
IH91

$a \rightarrow b \rightarrow b \leftarrow$
 $a \leftarrow b \leftarrow b \rightarrow$



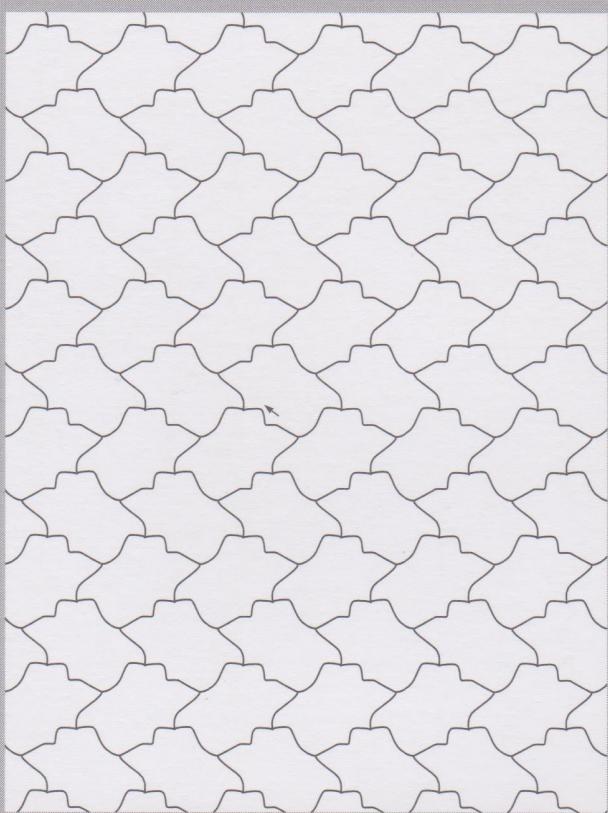
IH93

$a \rightarrow a \rightarrow a \rightarrow$
 $a \leftarrow a \leftarrow a \leftarrow$

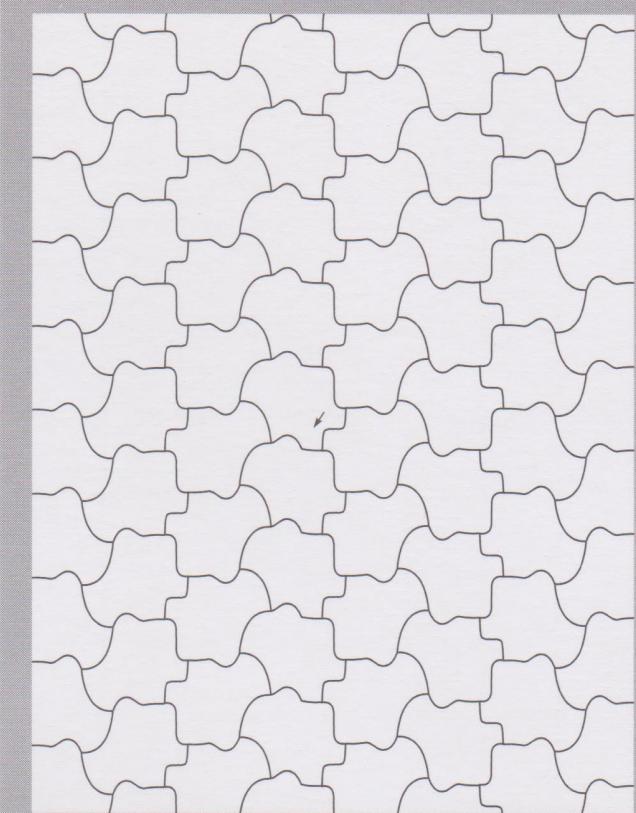


M336 TILING CARD 10

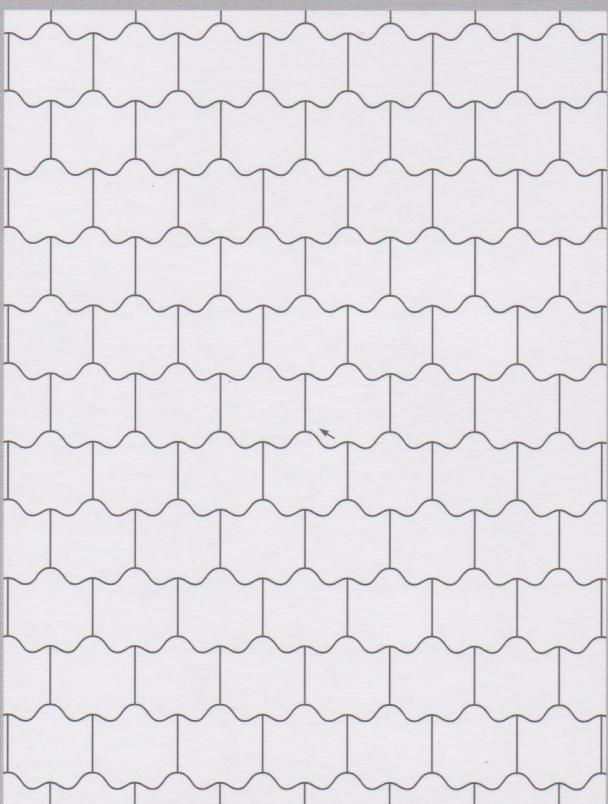
SIDE 1



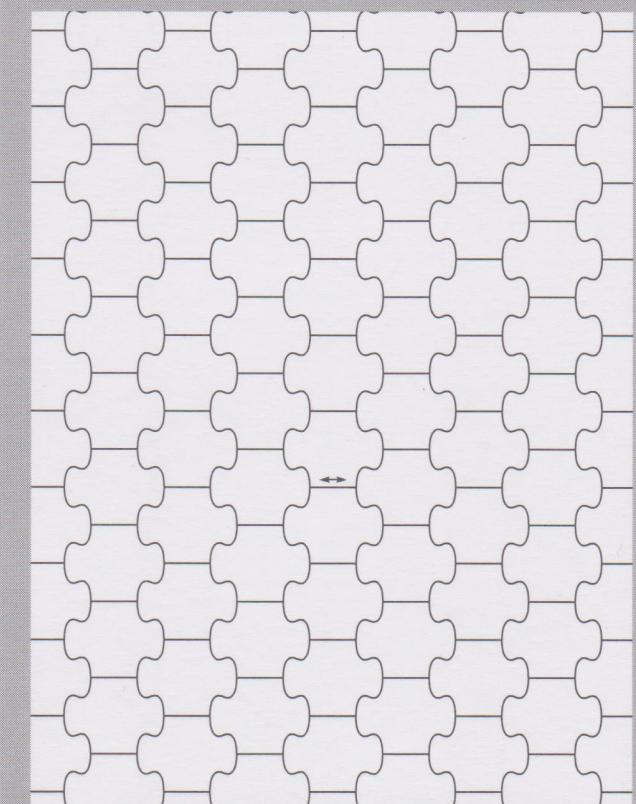
IH3



IH5

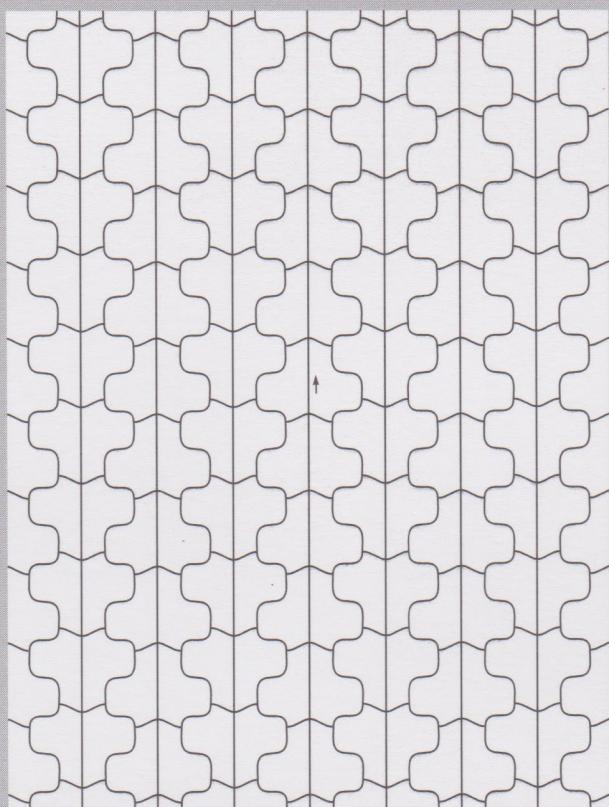


IH14

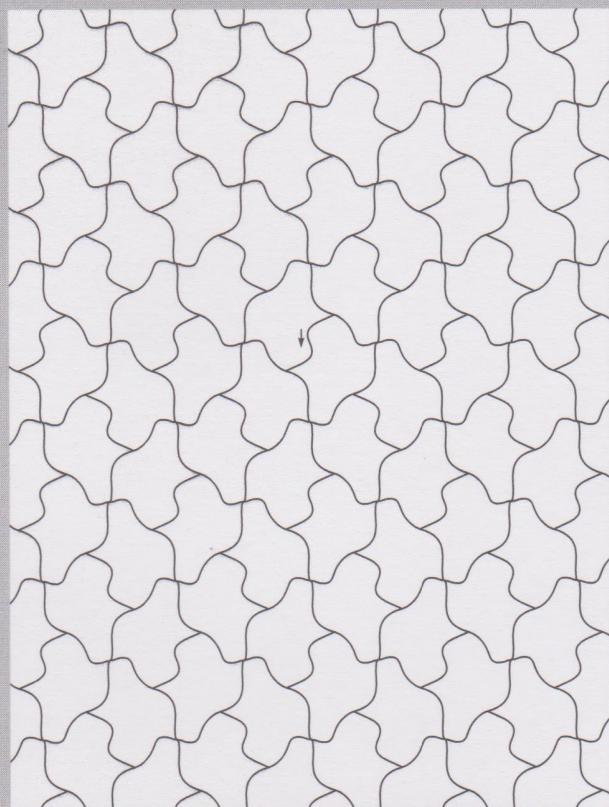


IH17

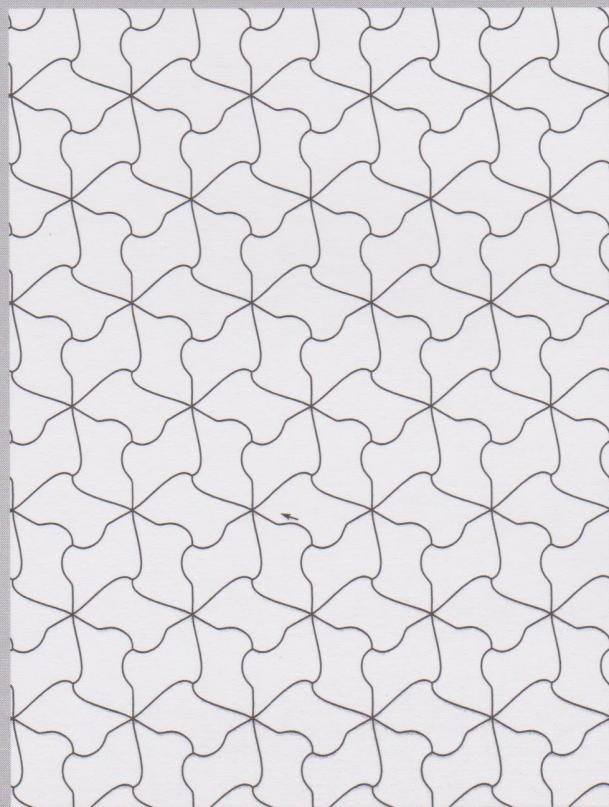
M336 TILING CARD 10 SIDE 2



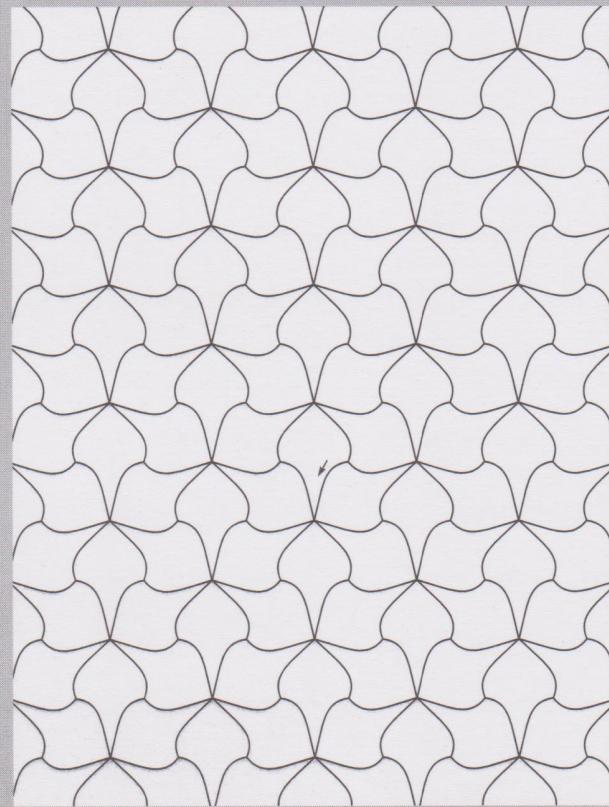
IH24



IH27

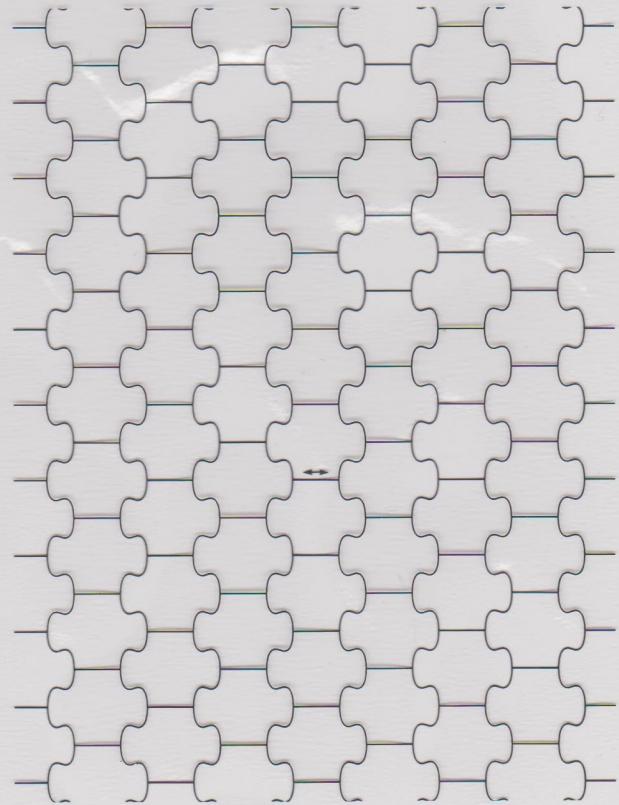
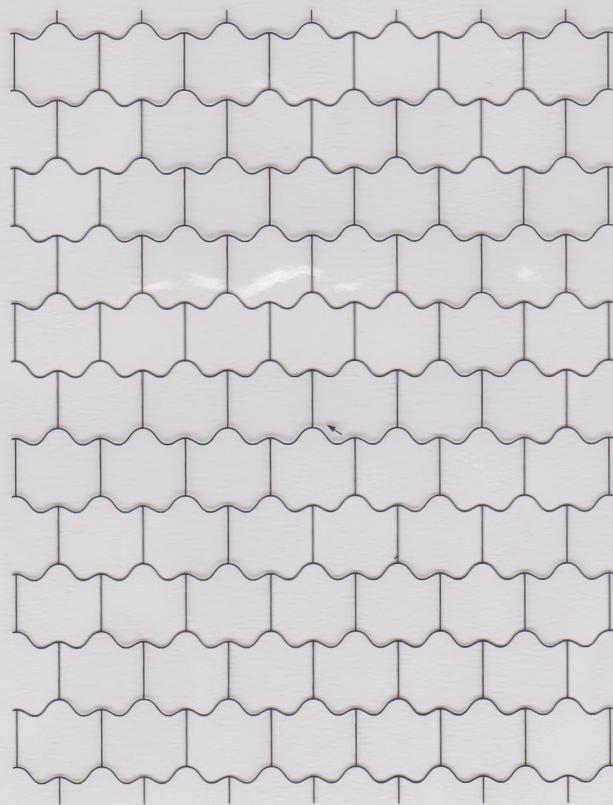
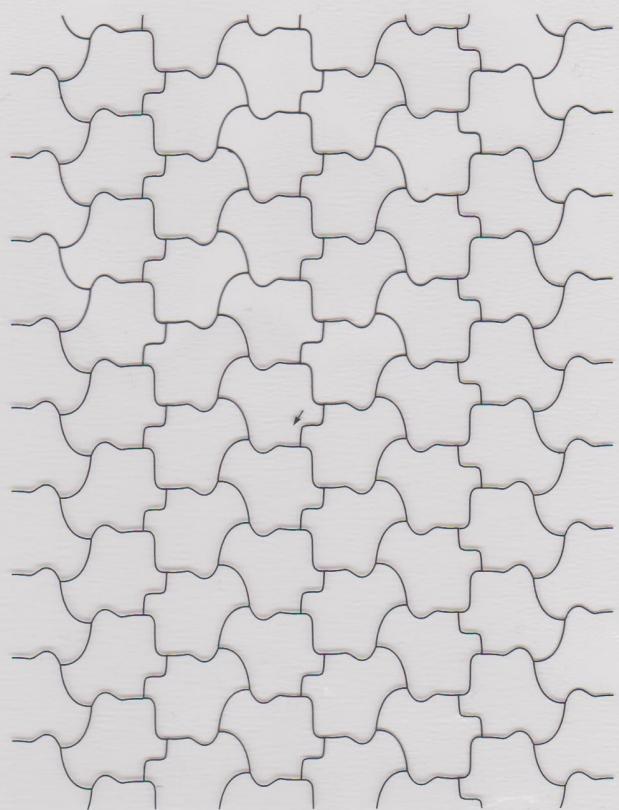
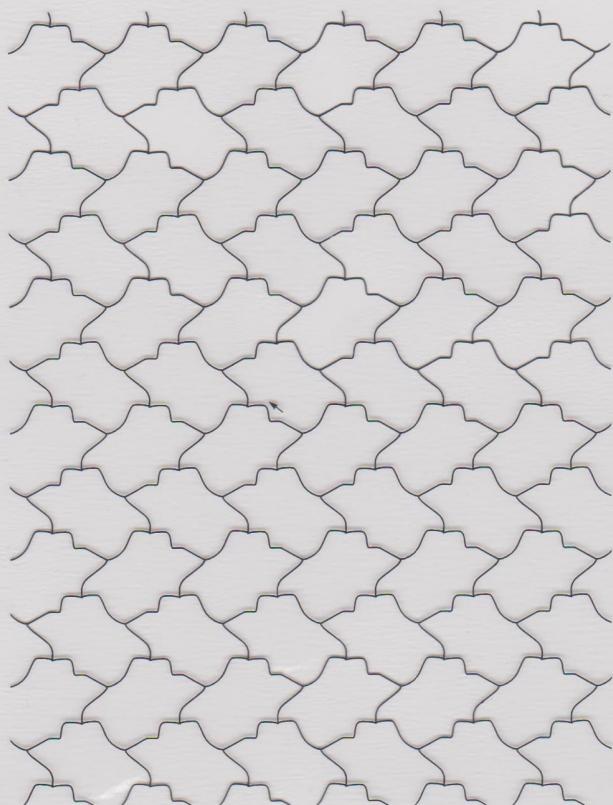


IH33



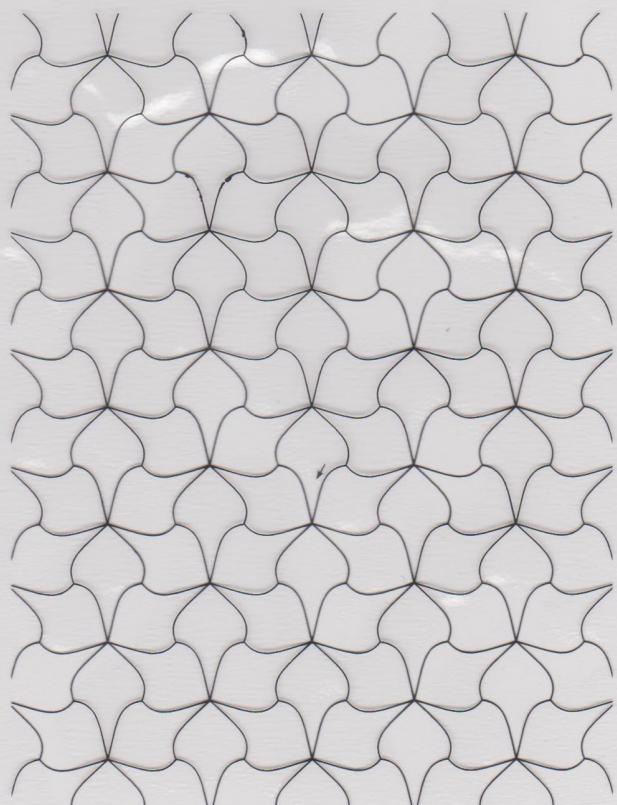
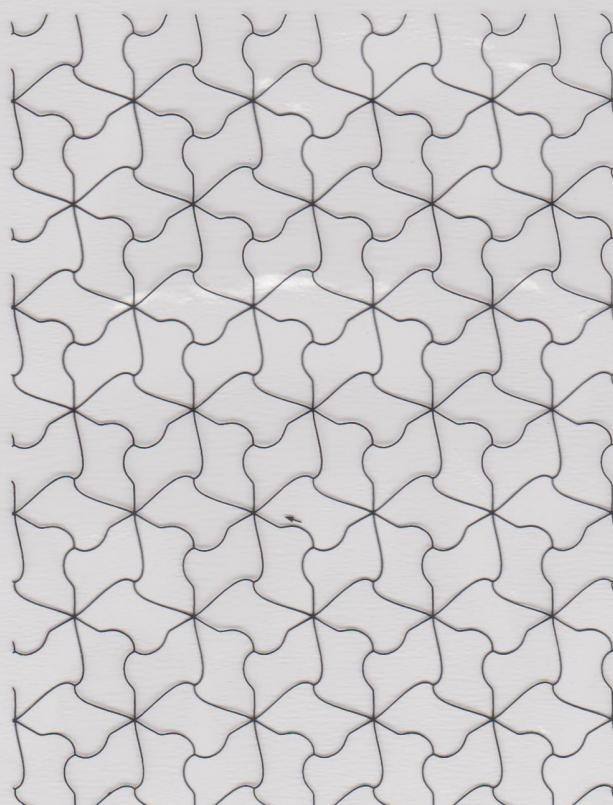
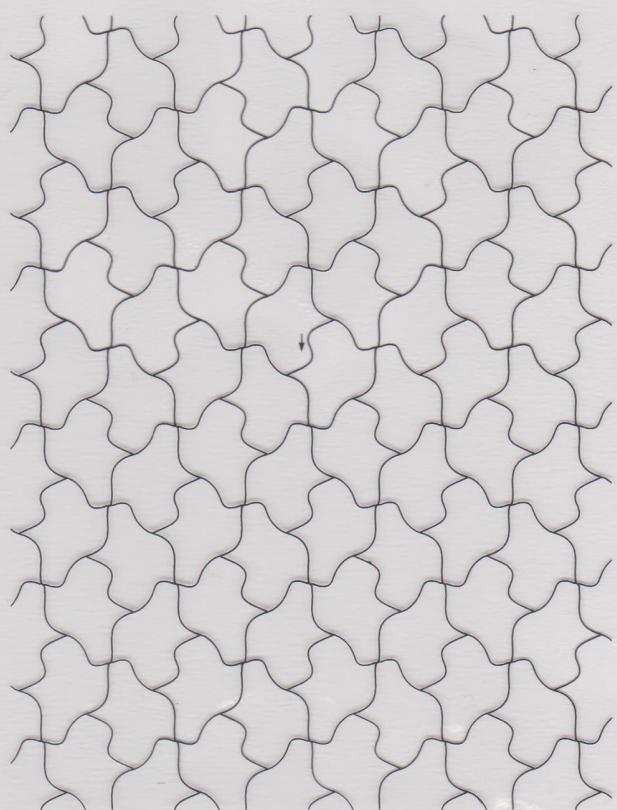
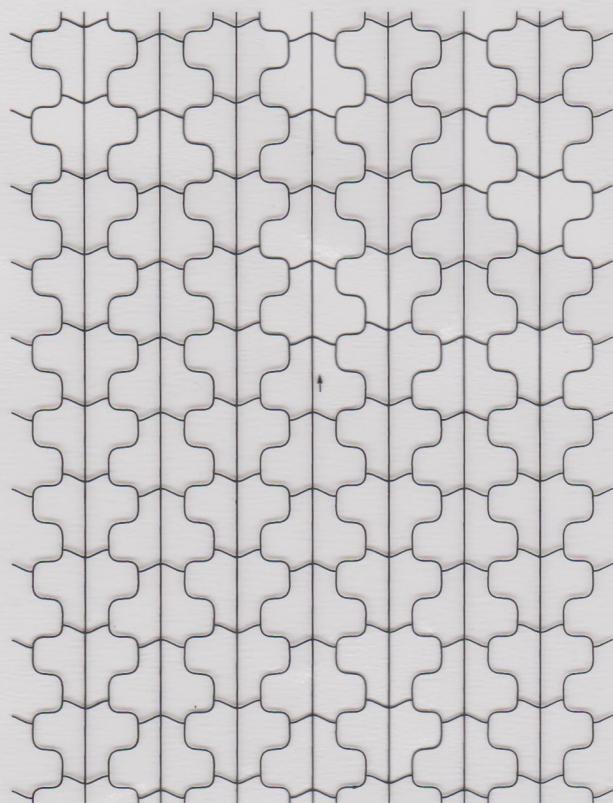
IH36

M336 TILING CARD 10 SIDE 1 OVERLAY

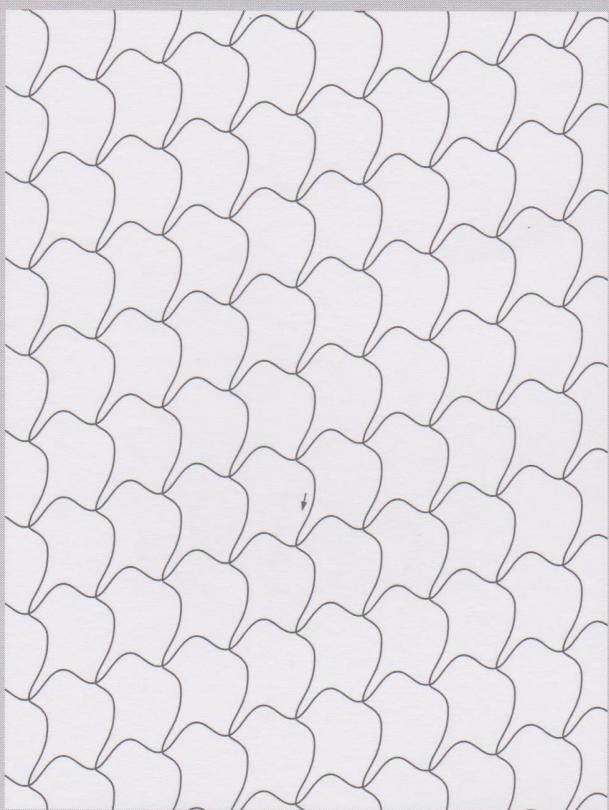


M336 TILING CARD 10

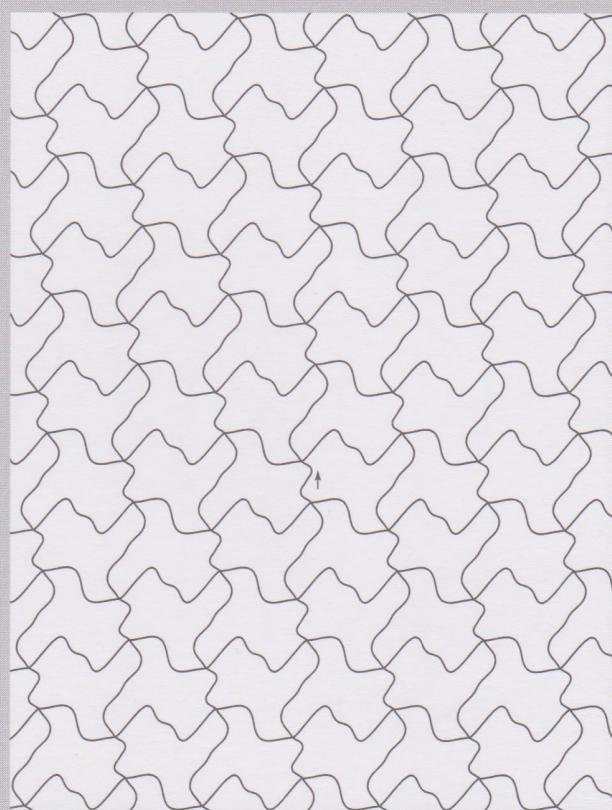
SIDE 2 OVERLAY



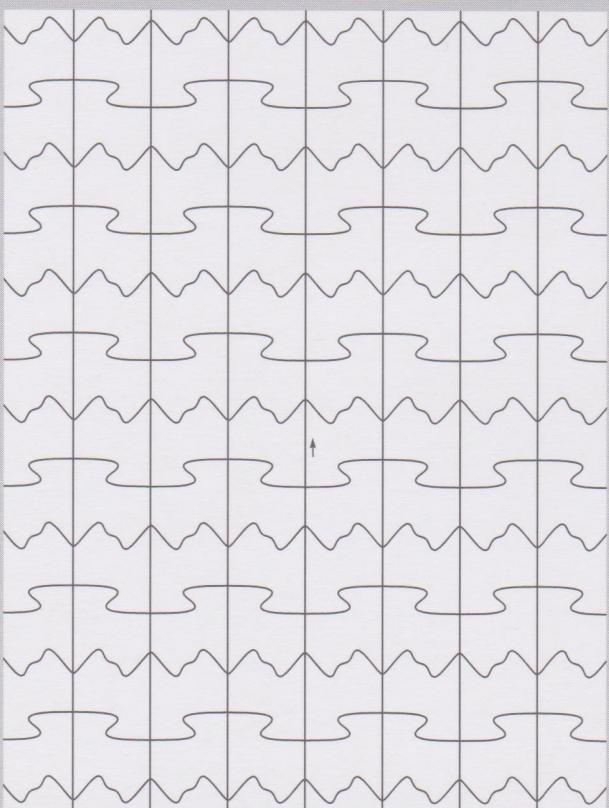
M336 TILING CARD 11 SIDE 1



IH41



IH46

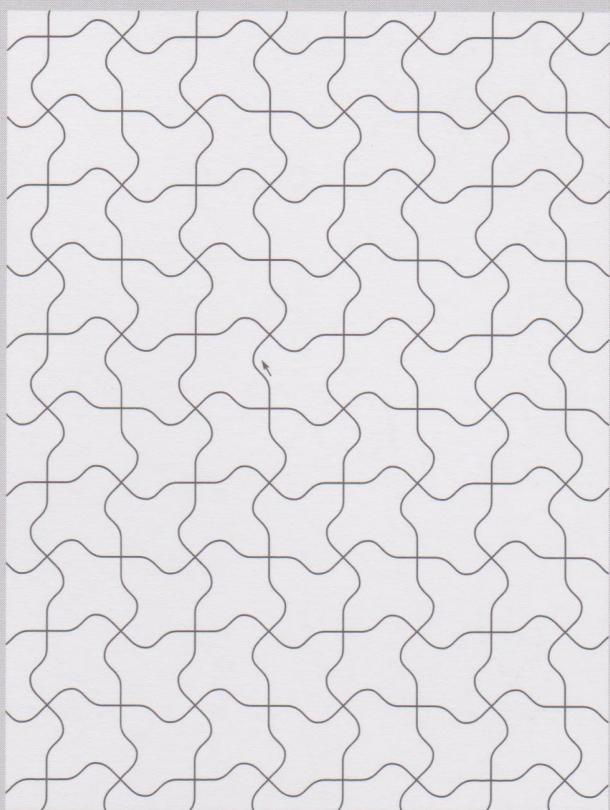


IH49

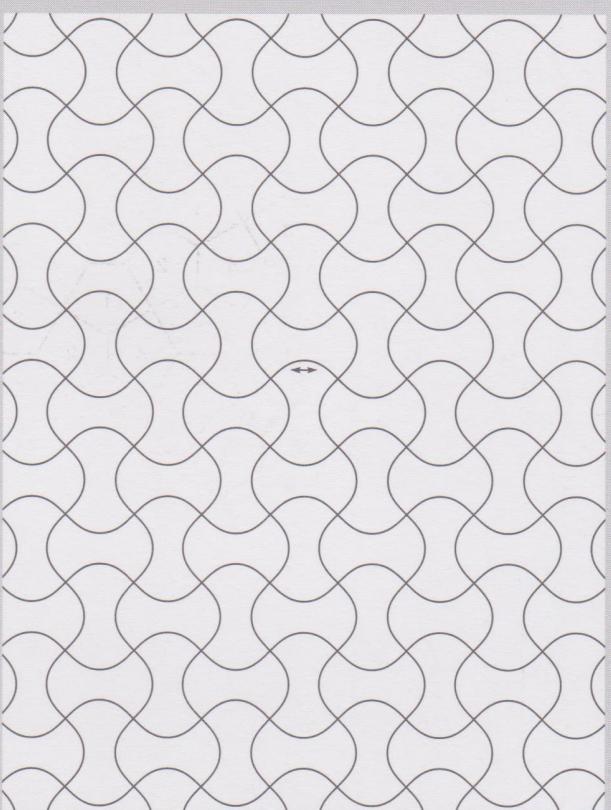


IH55

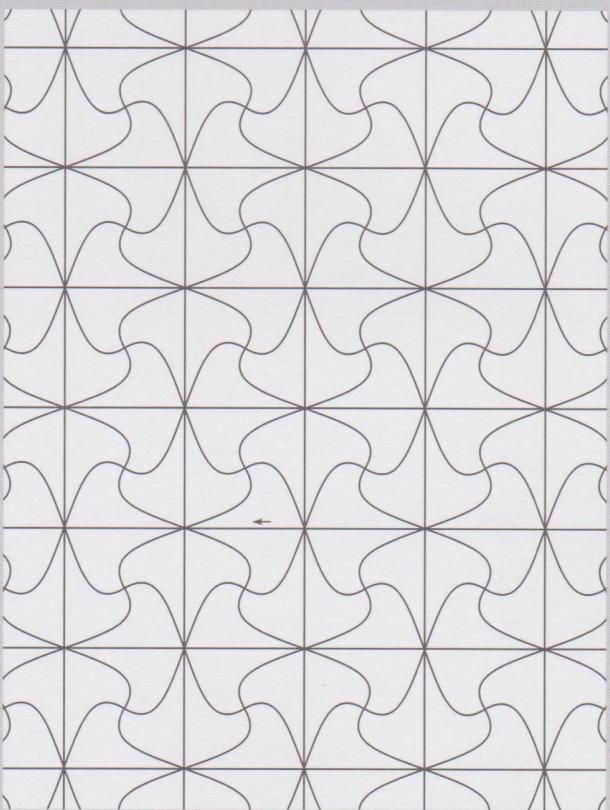
M336 TILING CARD 11 SIDE 2



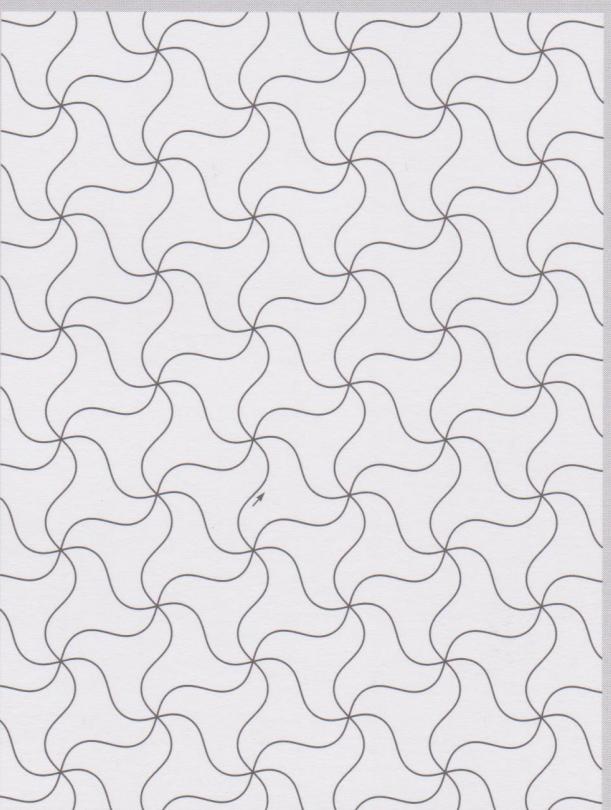
IH71



IH73



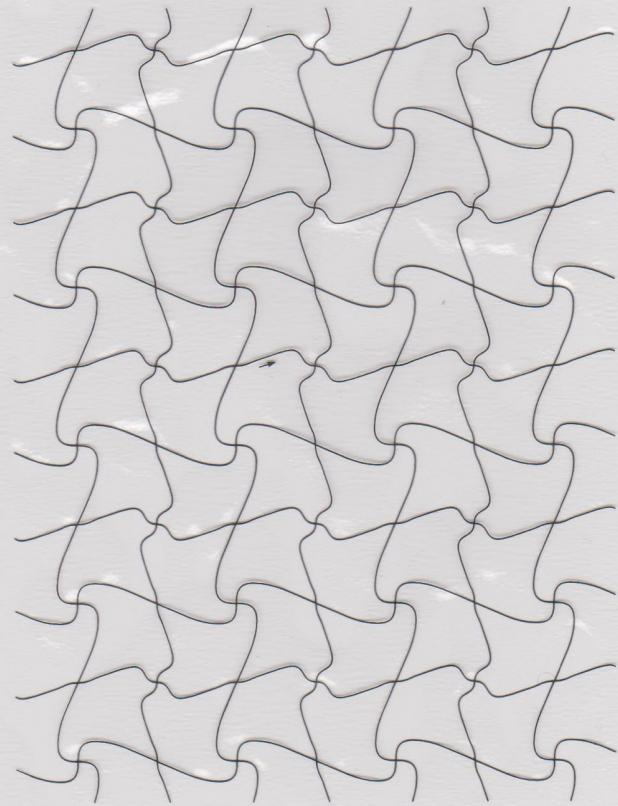
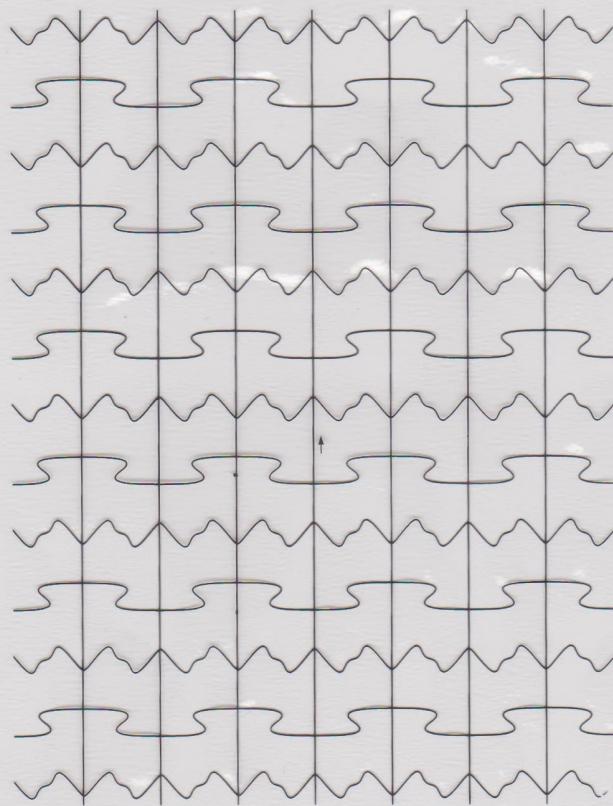
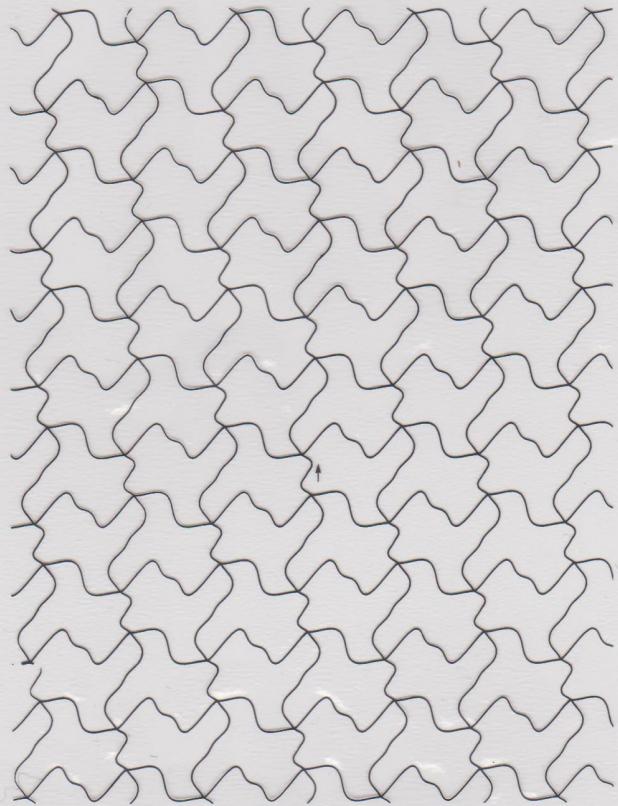
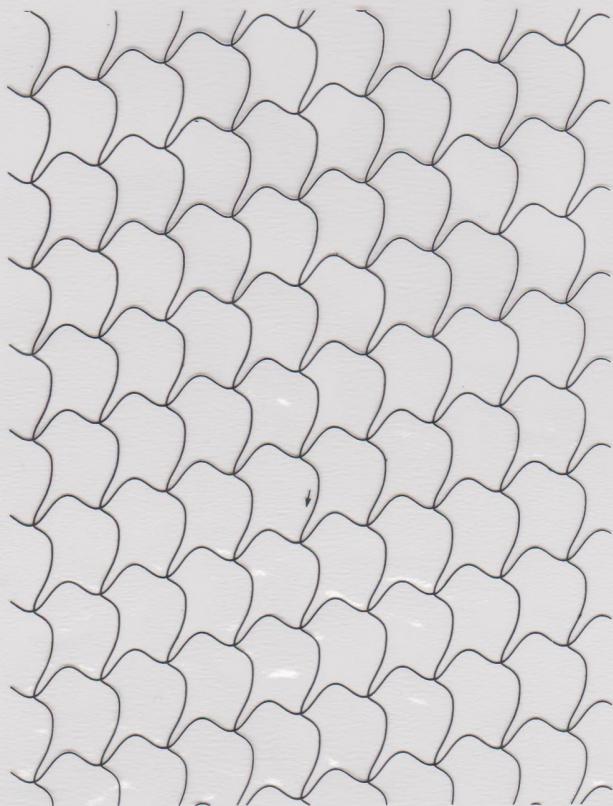
IH81



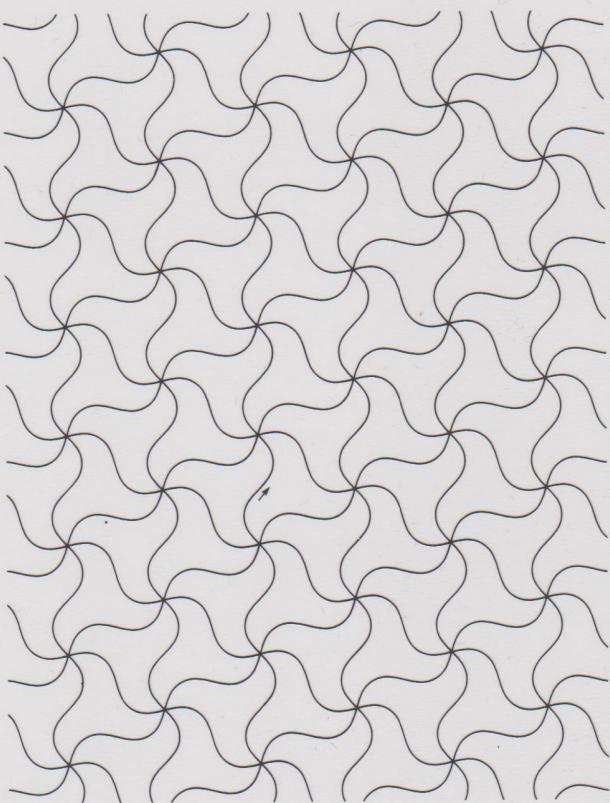
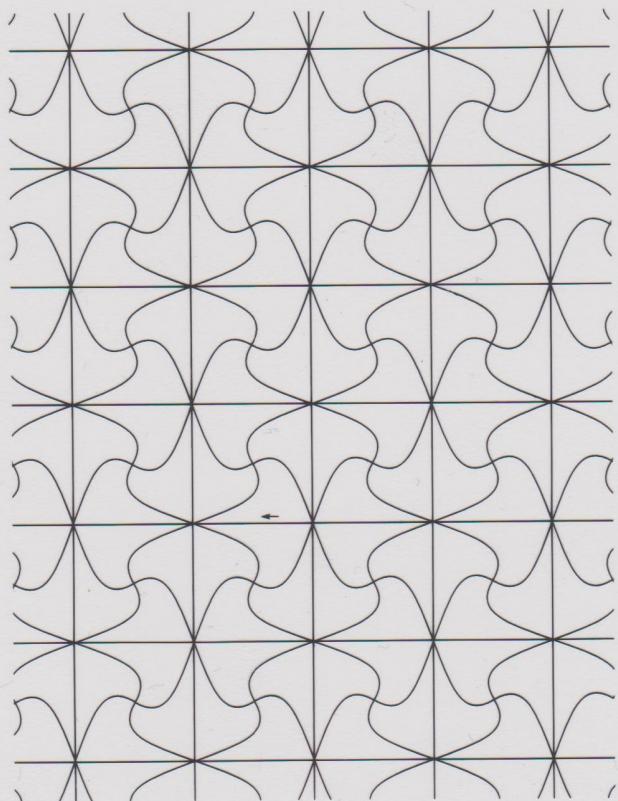
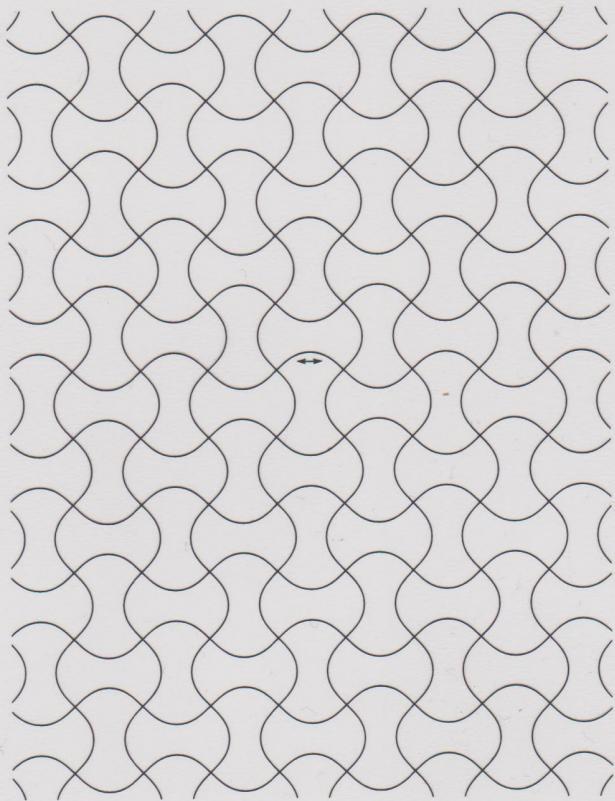
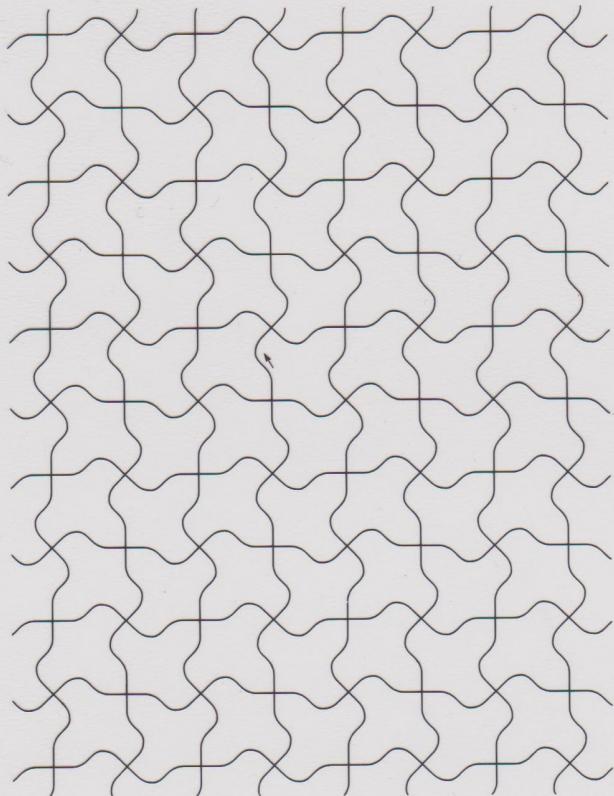
IH90

M336 TILING CARD 11

SIDE 1 OVERLAY



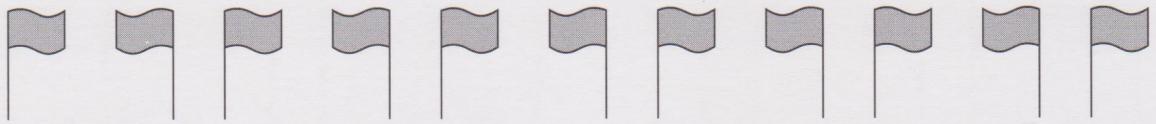
M336 TILING CARD 11 SIDE 2 OVERLAY



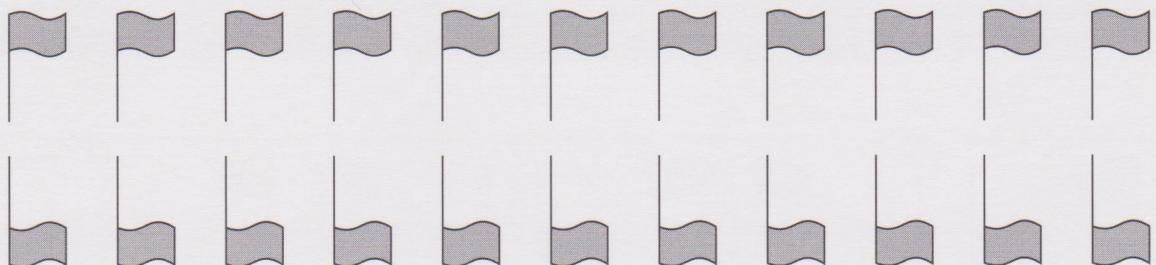
M336 FRIEZE CARD SIDE 1



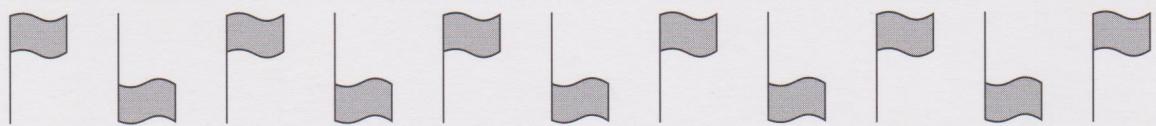
Type 1 F_1



Type 2 F_2

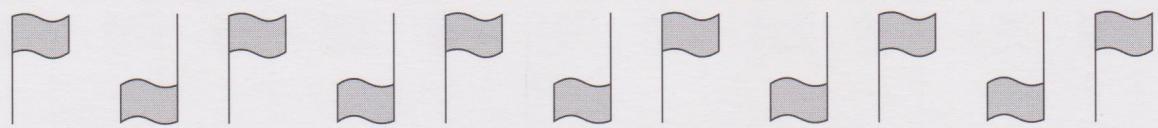


Type 3 F_3

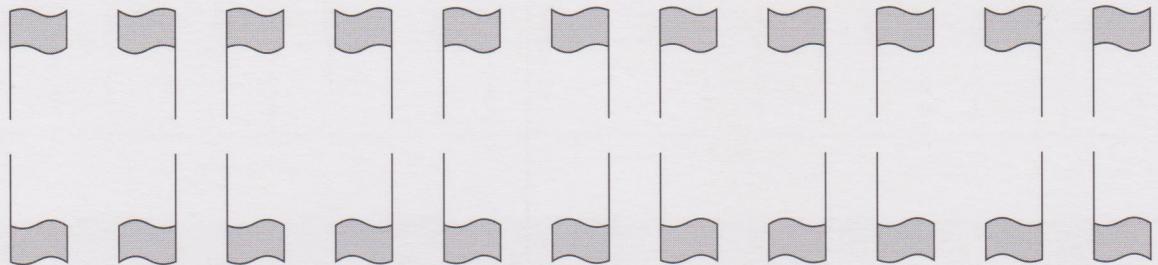


Type 4 F_4

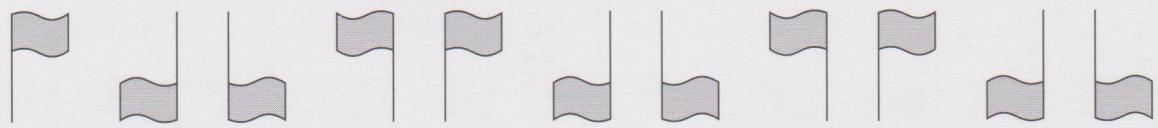
M336 FRIEZE CARD SIDE 2



Type 5 F_5



Type 6 F_6

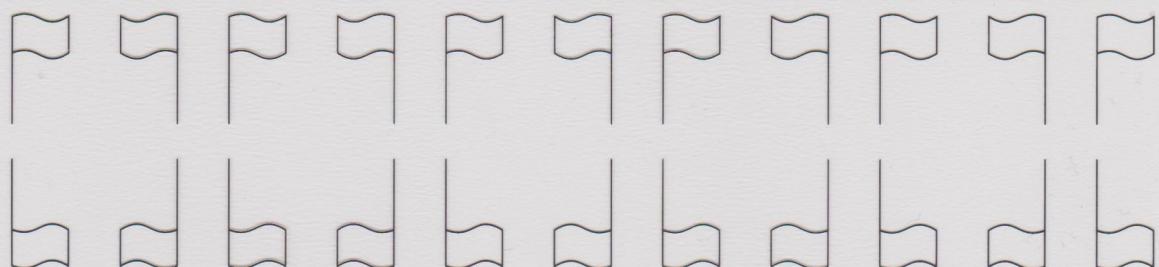
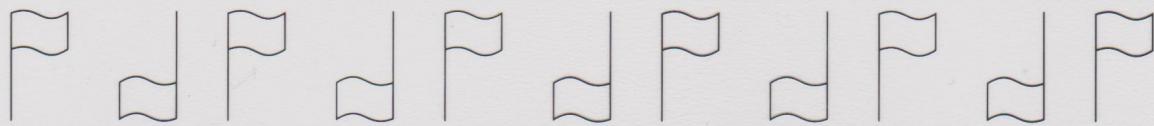


Type 7 F_7

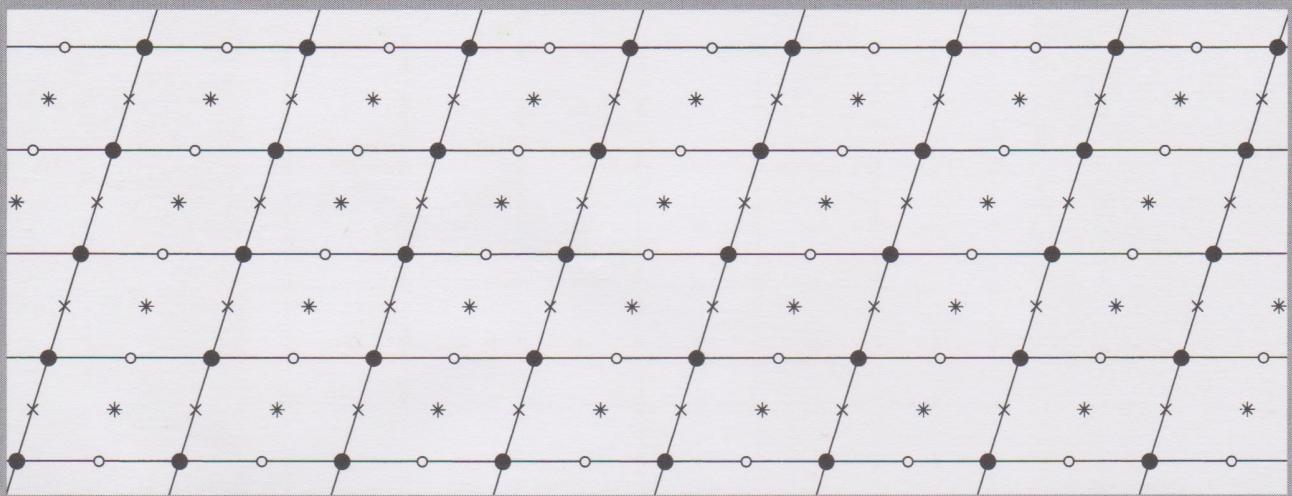
M336 FRIEZE CARD SIDE 1 OVERLAY



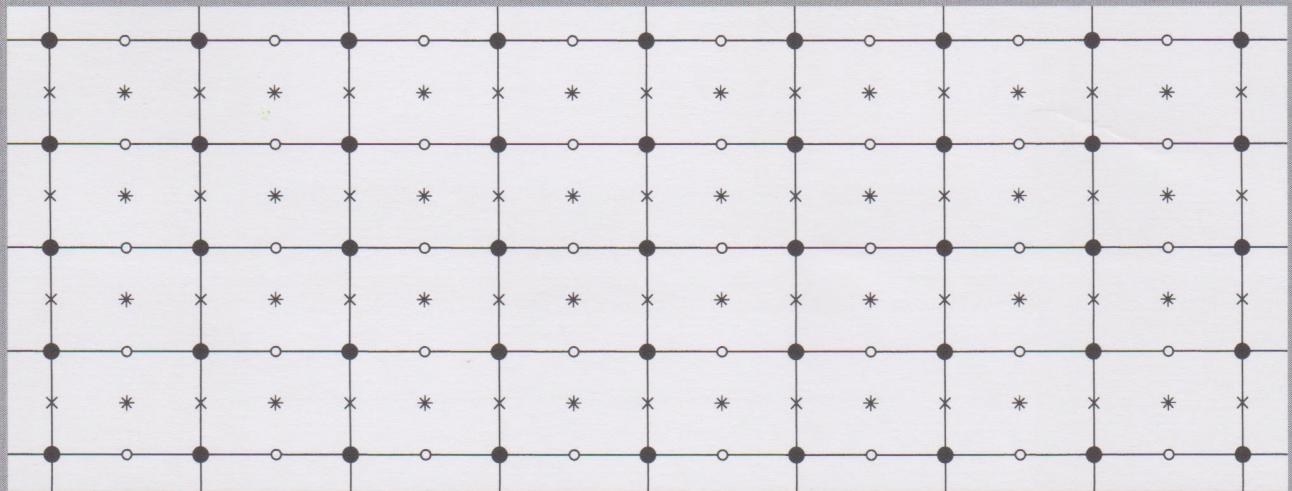
M336 FRIEZE CARD SIDE 2 OVERLAY



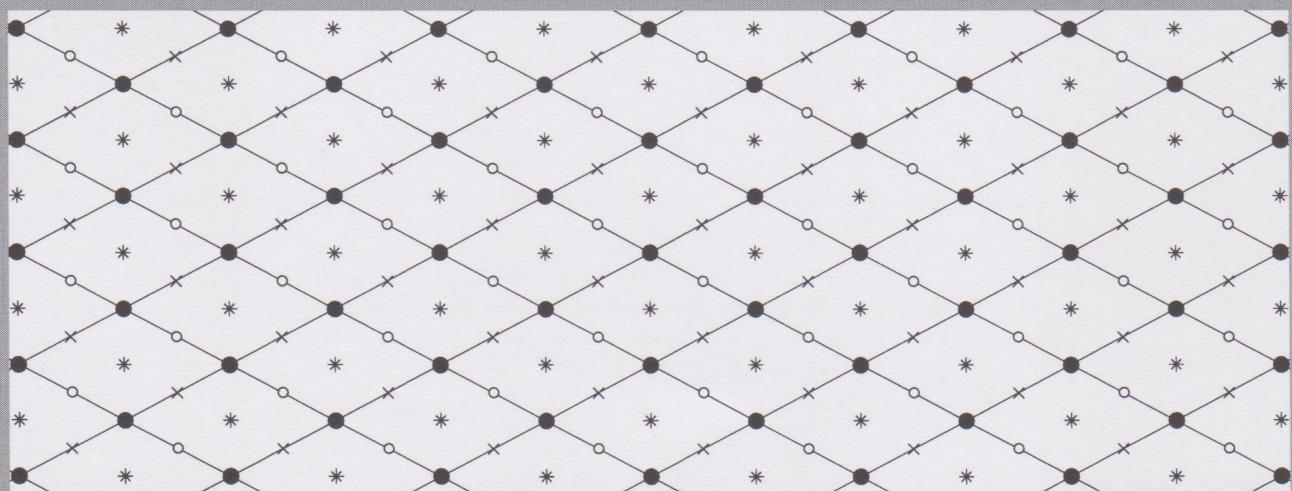
M336 LATTICE CARD SIDE 1



Parallelogram lattice

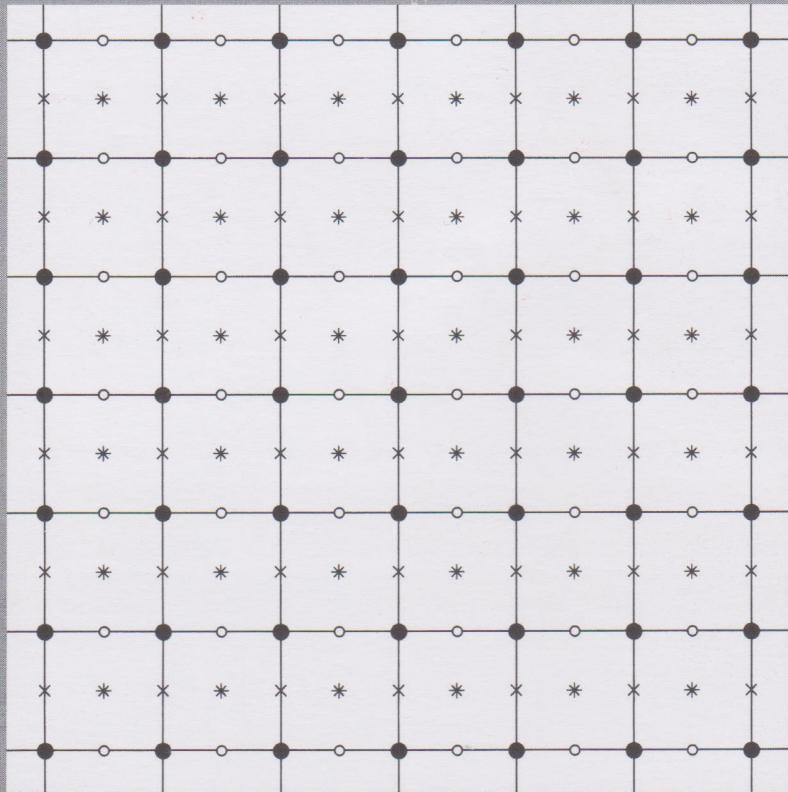


Rectangular lattice

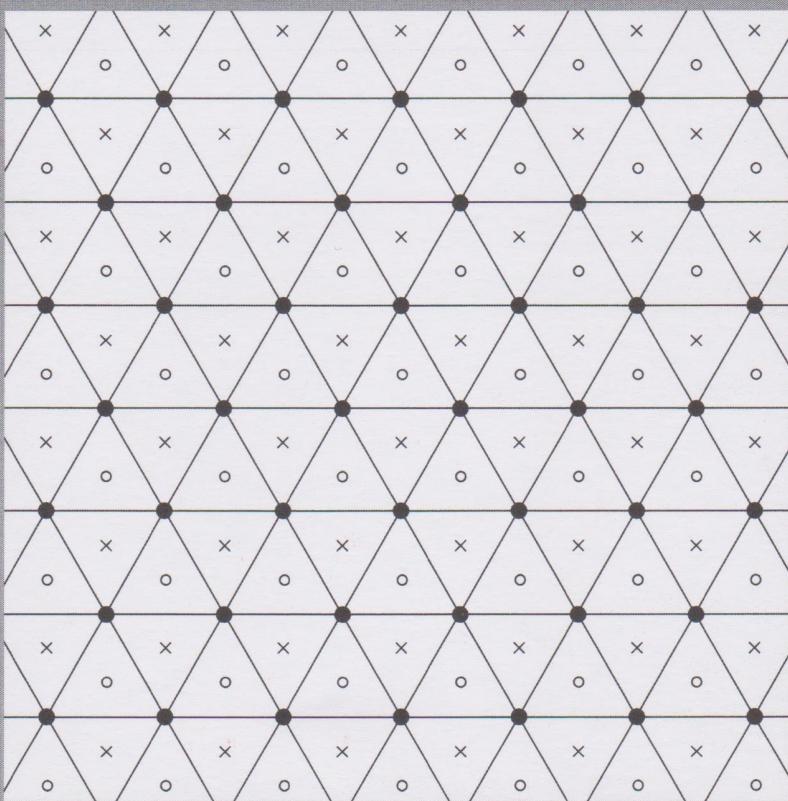


Rhombic lattice

M336 LATTICE CARD SIDE 2

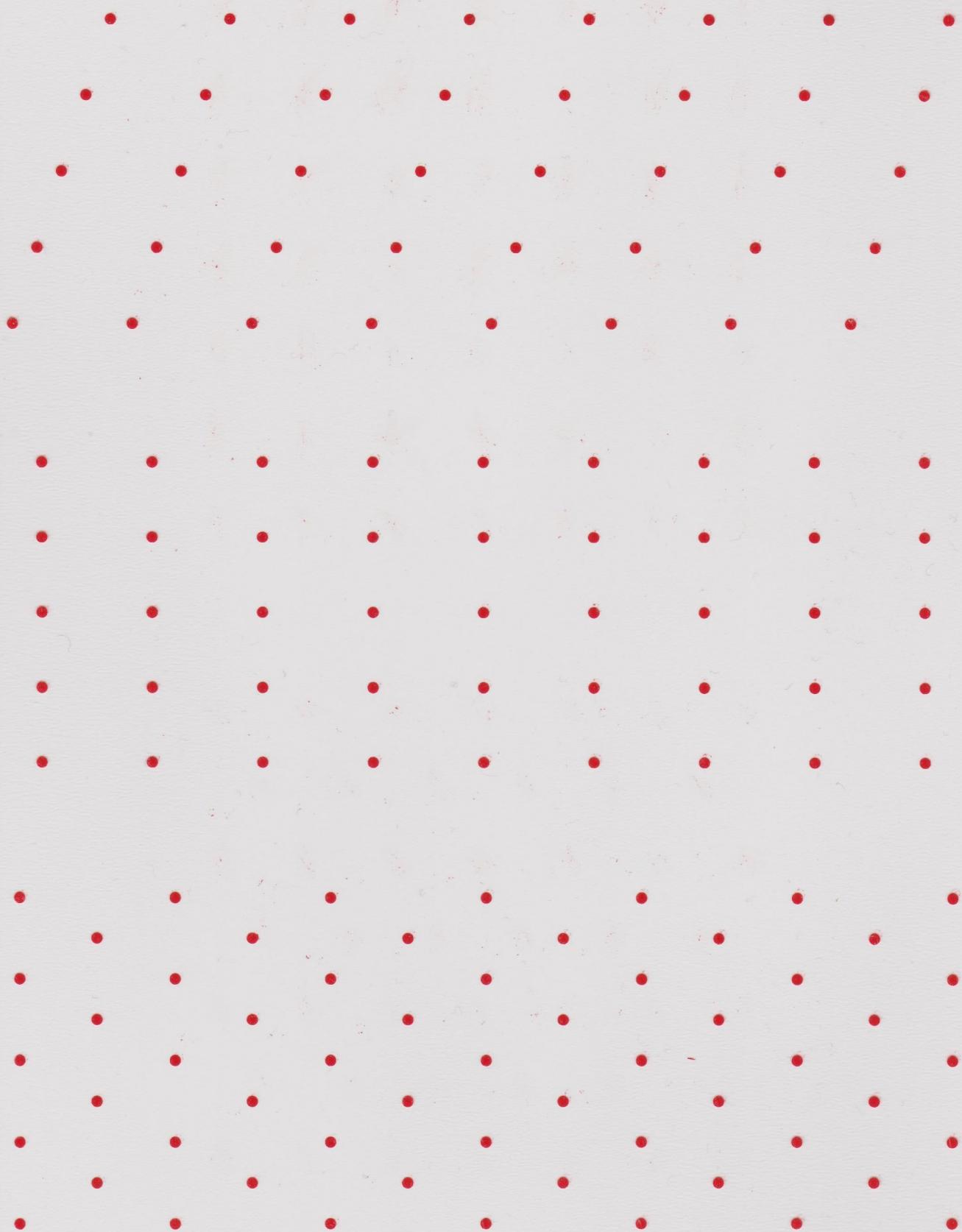


Square lattice

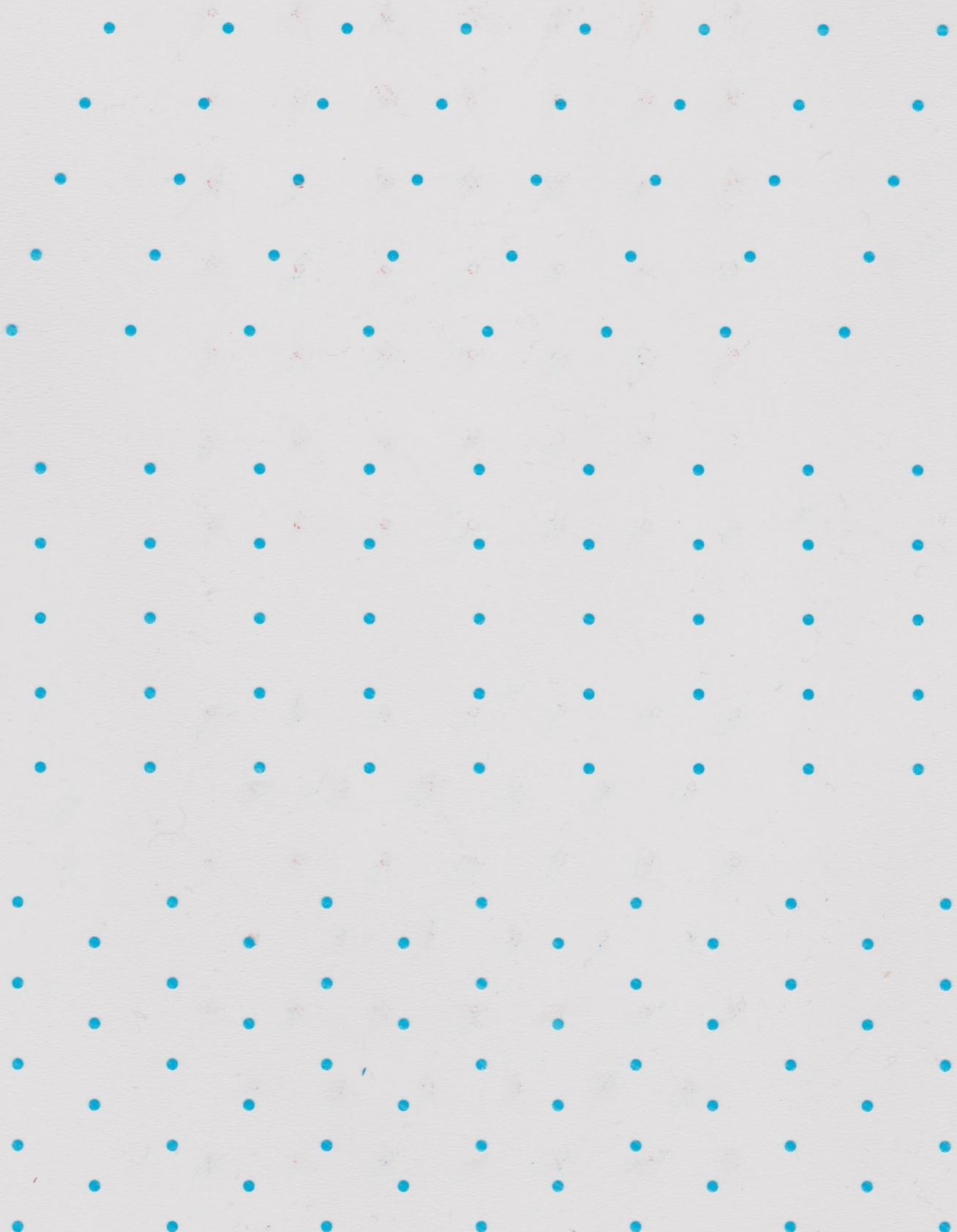


Hexagonal lattice

M336 LATTICE CARD SIDE 1 OVERLAY 1



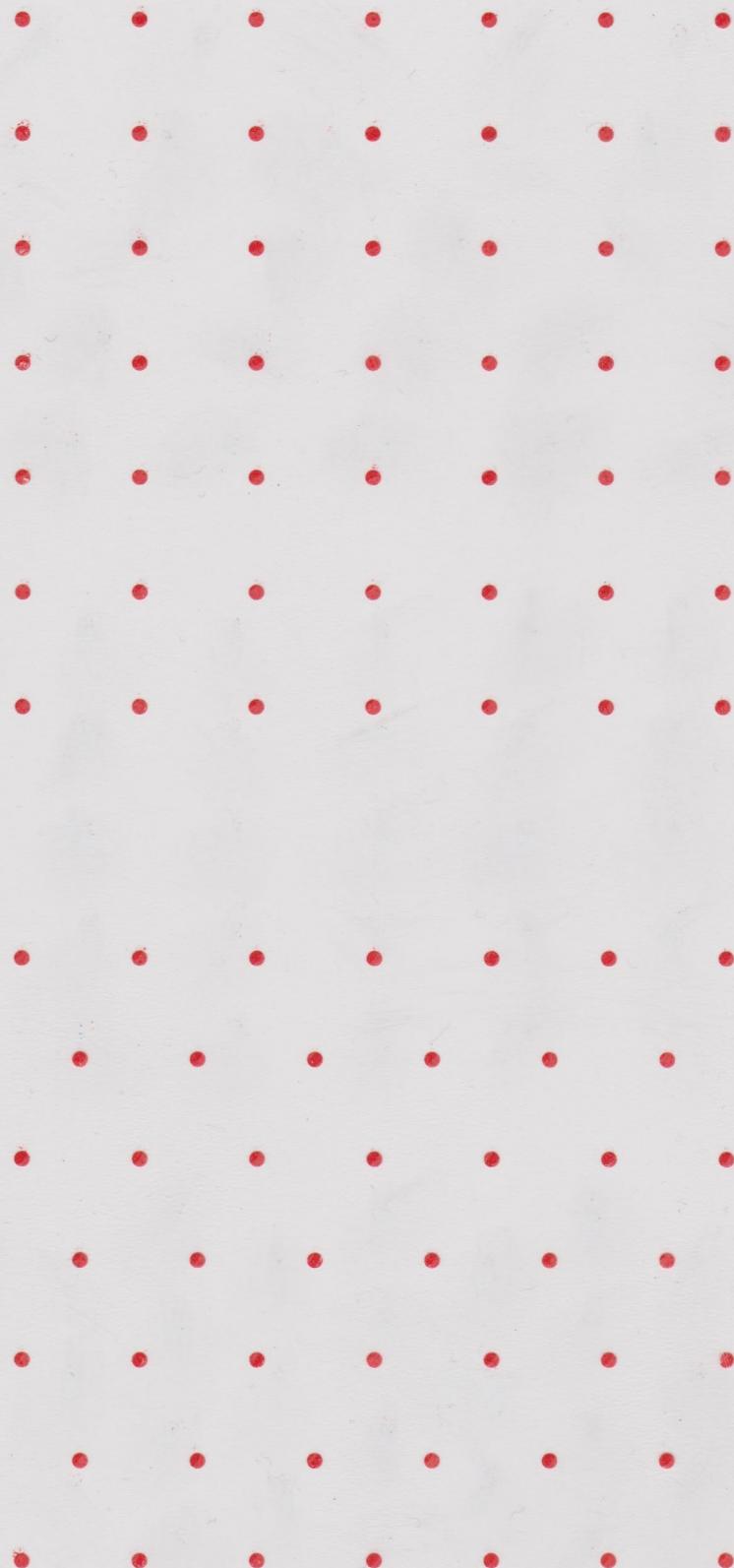
M336 LATTICE CARD SIDE 2 OVERLAY 2



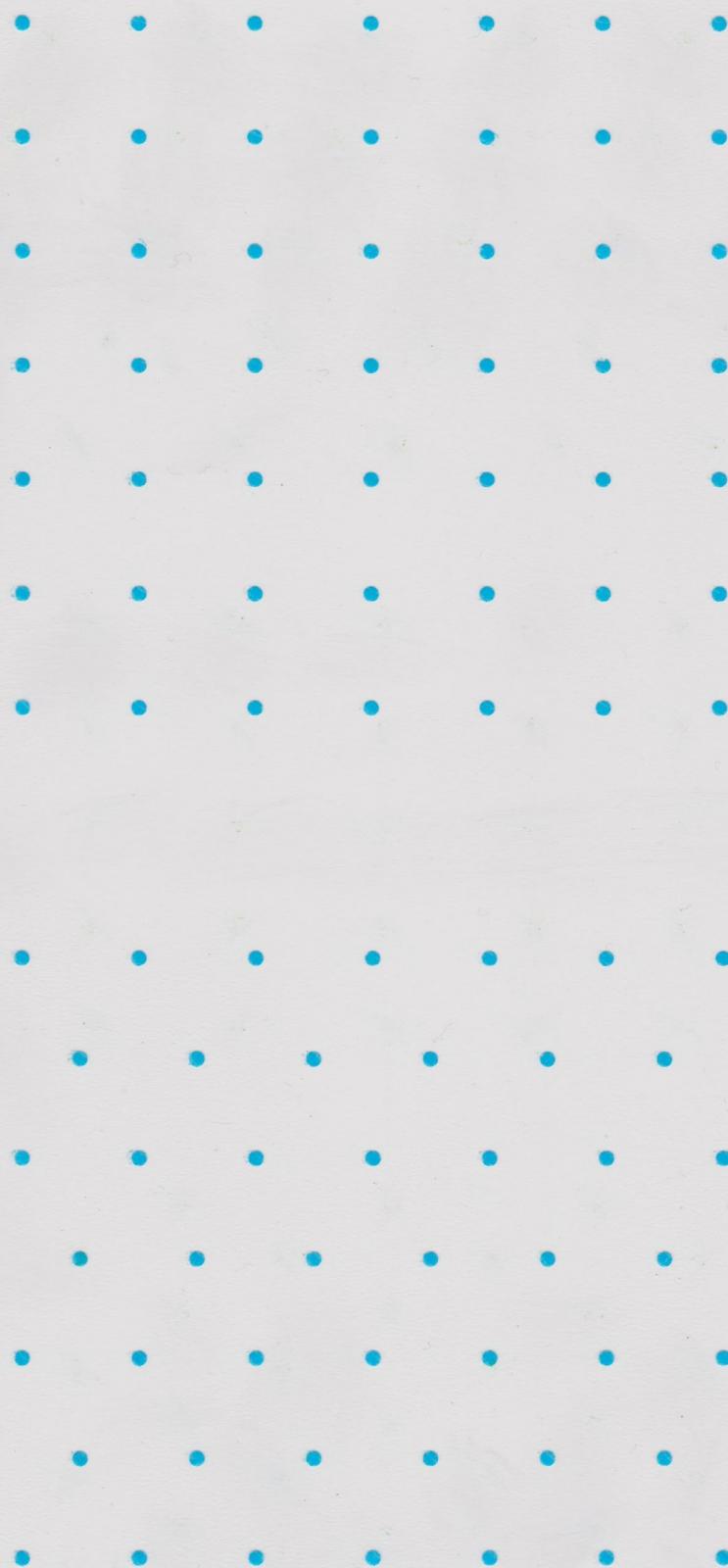
M336 LATTICE CARD SIDE 1 OVERLAYS



M336 LATTICE CARD SIDE 2 OVERLAY 1



M336 LATTICE CARD SIDE 2 OVERLAY 2

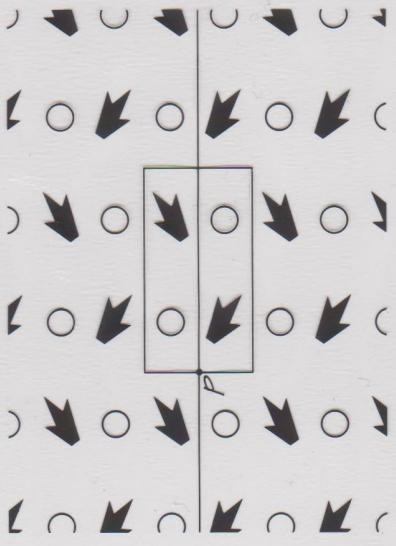
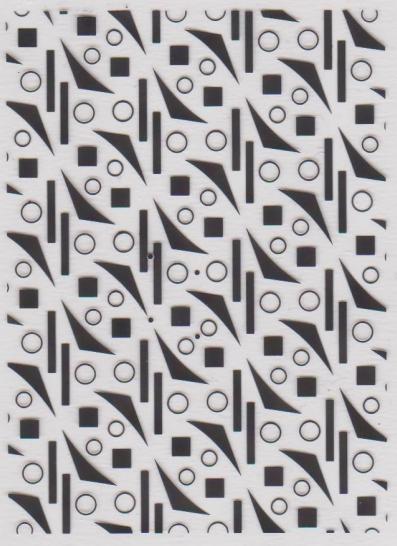


M336 LATTICE CARD SIDE 2 OVERLAY 3



M336 UNIT GE4 TAPE FRAME OVERLAYS

A

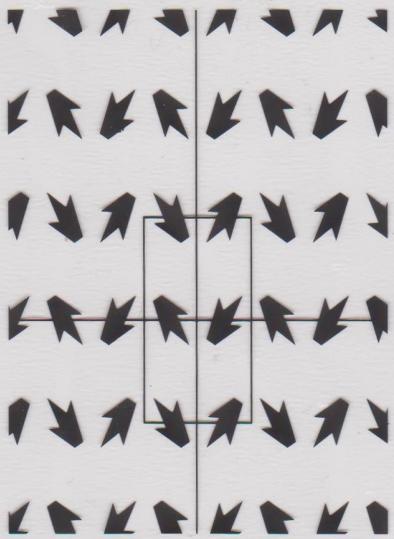


M336 UNIT GE4 TAPE FRAME OVERLAYS

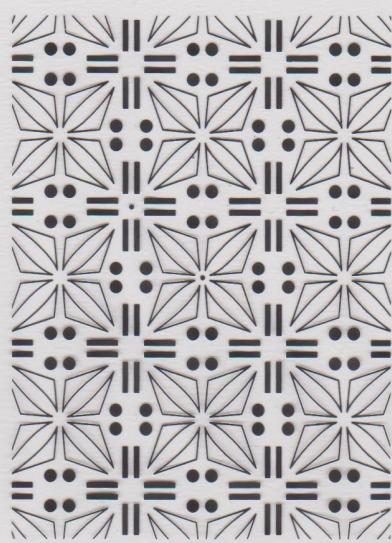
B



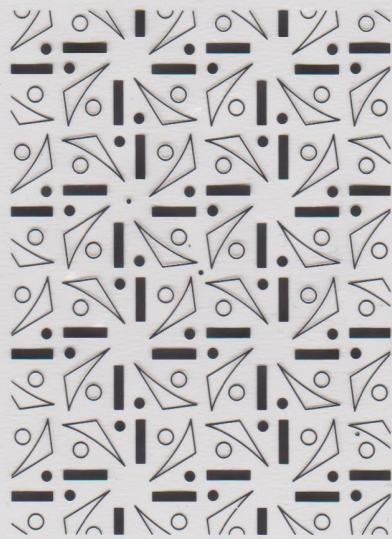
OVERLAY 3.1B



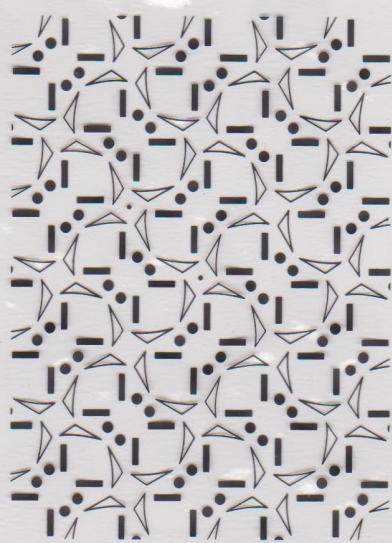
OVERLAY 3.2



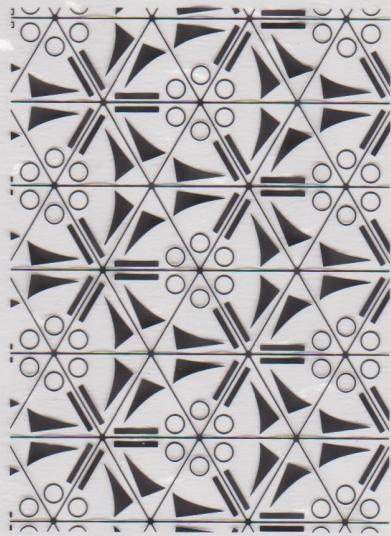
OVERLAY 7.1



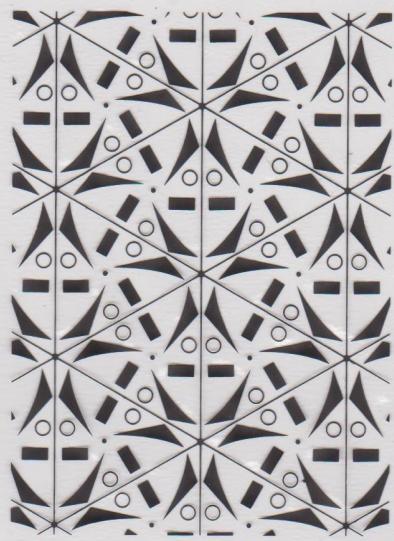
OVERLAY 7.2



OVERLAY 7.3



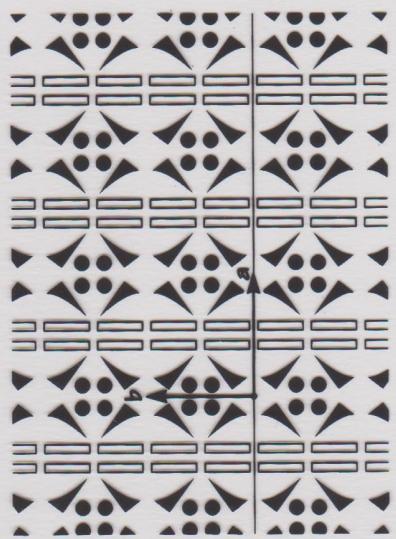
OVERLAY 9.2



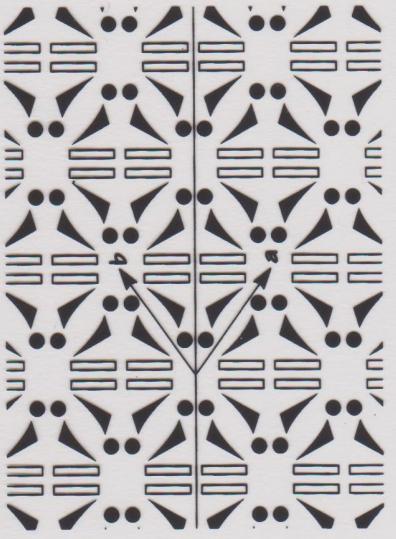
OVERLAY 9.3

M3336 UNIT GE4 TAPE FRAME OVERLAYS

D



OVERLAY 13.2



OVERLAY 13.3



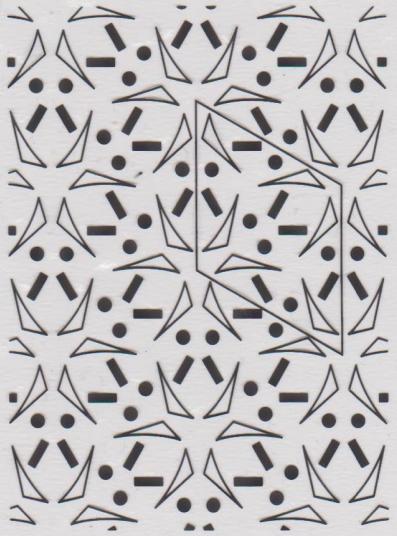
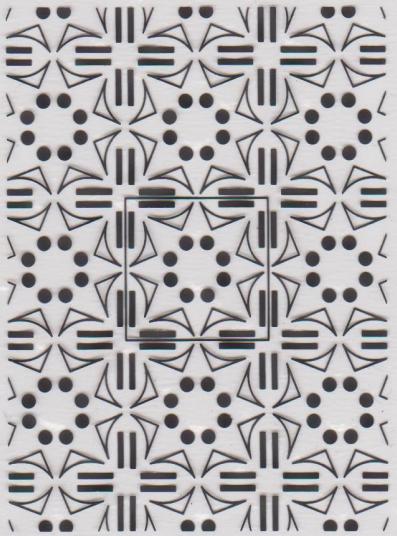
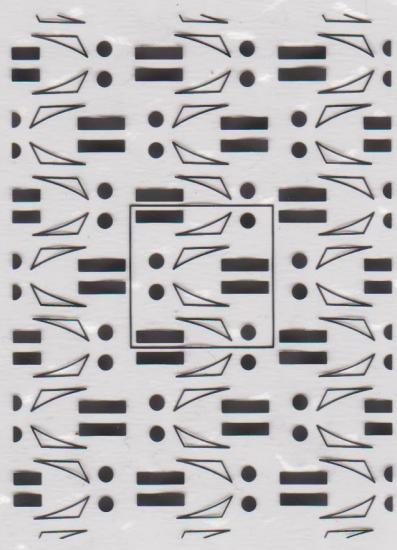
OVERLAY 16



OVERLAY 17

M336 UNIT GE4 TAPE FRAME OVERLAYS

E



M336 ISOMETRY TOOLKIT

Composites

$$t[\mathbf{p}] t[\mathbf{q}] = t[\mathbf{p} + \mathbf{q}]. \quad (1)$$

$$r[\theta] r[\phi] = r[\theta + \phi]. \quad (2)$$

$$q[\theta] q[\phi] = r[2(\theta - \phi)]. \quad (3)$$

$$r[\theta] q[\phi] = q[\phi + \frac{1}{2}\theta]. \quad (4)$$

$$q[\phi] r[\theta] = q[\phi - \frac{1}{2}\theta]. \quad (5)$$

If f is any isometry fixing the origin,

$$f t[\mathbf{p}] = t[f(\mathbf{p})] f; \quad (6)$$

that is,

$$r[\theta] t[\mathbf{p}] = t[r[\theta](\mathbf{p})] r[\theta], \quad (6a)$$

$$q[\theta] t[\mathbf{p}] = t[q[\theta](\mathbf{p})] q[\theta]. \quad (6b)$$

$$r[\mathbf{c}, \theta] = t[\mathbf{c}] r[\theta] t[-\mathbf{c}] \quad (7)$$

$$= t[\mathbf{d}] r[\theta], \quad \text{where } \mathbf{d} = \mathbf{c} - r[\theta](\mathbf{c}). \quad (8)$$

In particular,

$$r[\mathbf{c}, \pi] = t[2\mathbf{c}] r[\pi]. \quad (\text{Figure B}) \quad (9)$$

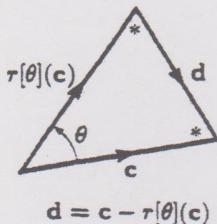


Figure A

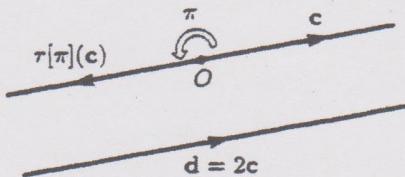


Figure B

$$q[\mathbf{c}, \theta] = t[\mathbf{c}] q[\theta] t[-\mathbf{c}] \quad (10)$$

$$= t[\mathbf{d}] q[\theta], \quad \text{where } \mathbf{d} = \mathbf{c} - q[\theta](\mathbf{c}). \quad (\text{Figure C}) \quad (11)$$

In particular, when \mathbf{c} is perpendicular to the reflection axis,

$$q[\mathbf{c}, \theta] = t[2\mathbf{c}] q[\theta]. \quad (\text{Figure D}) \quad (12)$$

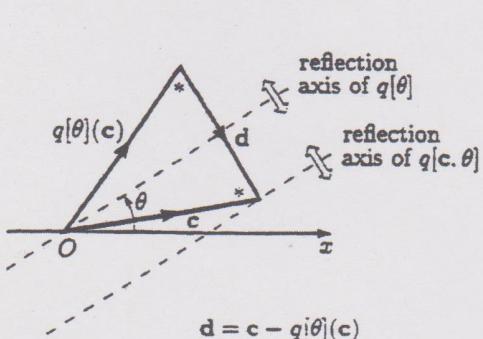


Figure C

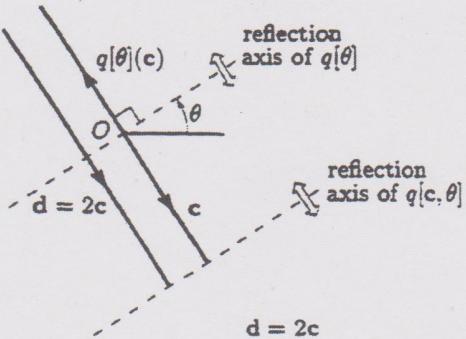


Figure D

$$q[\mathbf{g}, \mathbf{c}, \theta] = t[\mathbf{g} + \mathbf{c}] q[\theta] t[-\mathbf{c}] \quad (13)$$

$$= t[\mathbf{d}] q[\theta], \quad \text{where } \mathbf{d} = \mathbf{g} + \mathbf{c} - q[\theta](\mathbf{c}). \quad (14)$$

In particular, when \mathbf{c} is perpendicular to the reflection axis,

$$q[\mathbf{g}, \mathbf{c}, \theta] = t[\mathbf{g} \div 2\mathbf{c}] q[\theta]. \quad (15)$$

Inverses

$$(t[\mathbf{p}])^{-1} = t[-\mathbf{p}]. \quad (16)$$

$$(r[\theta])^{-1} = r[-\theta] = r[2\pi - \theta]. \quad (17)$$

$$(q[\theta])^{-1} = q[\theta]. \quad (18)$$

$$(r[\mathbf{c}, \theta])^{-1} = r[\mathbf{c}, -\theta] = r[\mathbf{c}, 2\pi - \theta]. \quad (19)$$

$$(q[\mathbf{c}, \theta])^{-1} = q[\mathbf{c}, \theta]. \quad (20)$$

$$(q[\mathbf{g}, \mathbf{c}, \theta])^{-1} = q[-\mathbf{g}, \mathbf{c}, \theta]. \quad (21)$$

Conversion to explicit form

Let $\mathbf{p} = (u, v)$.

To convert $t[\mathbf{p}] r[\theta]$ to explicit form, use

$$t[\mathbf{p}] r[\theta]: (x, y) \mapsto (x \cos \theta - y \sin \theta + u, x \sin \theta + y \cos \theta + v), \quad (22)$$

or alternatively

$$t[\mathbf{p}] r[\theta]: \begin{bmatrix} x \\ y \end{bmatrix} \mapsto \begin{bmatrix} \cos \theta & -\sin \theta \\ \sin \theta & \cos \theta \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} + \begin{bmatrix} u \\ v \end{bmatrix}. \quad (22a)$$

To convert $t[\mathbf{p}] q[\theta]$ to explicit form, use

$$t[\mathbf{p}] q[\theta]: (x, y) \mapsto (x \cos 2\theta + y \sin 2\theta + u, x \sin 2\theta - y \cos 2\theta + v), \quad (23)$$

or alternatively

$$t[\mathbf{p}] q[\theta]: \begin{bmatrix} x \\ y \end{bmatrix} \mapsto \begin{bmatrix} \cos 2\theta & \sin 2\theta \\ \sin 2\theta & -\cos 2\theta \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} + \begin{bmatrix} u \\ v \end{bmatrix}. \quad (23a)$$

To convert $r[\mathbf{c}, \theta]$ to explicit form, use Equation 8 then Equation 22.

To convert $q[\mathbf{c}, \theta]$ to explicit form, use Equation 11 then Equation 23.

To convert $q[\mathbf{g}, \mathbf{c}, \theta]$ to explicit form, use Equation 14 then Equation 23.